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BERTRAND BROWN
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INTRODUCTORY

THE lack of application of knowledge which is in the possession of experts has been characterized by President Farrand of Cornell University as about the most difficult thing with which the world has to contend.

In 1923, the Milbank Memorial Fund began the publication of the *Quarterly Bulletin*, devoted chiefly to presenting a record of experiences in the New York Health Demonstrations. Much data about disease prevention and control, including facts reflecting concrete achievements in decreased morbidity and mortality, and much information concerning methods and results of health educational campaigns and public health administration in general, have thus been made available to those who could use this knowledge to good advantage.

It has gradually become apparent that the space heretofore afforded by the *Bulletin* is not sufficient to provide an adequate journal for the present manifold interests and activities of the Fund. Projects growing out of the health demonstrations, recently terminated, call for continued comment, as do numerous new enterprises in the fields of public health, social welfare, and education, to the development of which the Fund is contributing. From the studies of its division of research and of various groups with which it is cooperating, information is being derived which should be made available to those who in actual work-a-day practice are confronted with the problems upon which it bears.

It is hoped that the inauguration with this issue of a larger bulletin will permit a more adequate presentation in the future of the many activities in which the foundation and its friends are engaged.

Med. sch.
Md. Medical & chirurgical faculty.
6-9-36

THE FIRST YEAR OF THE RURAL HEALTH EXPERIMENT IN TING HSIEN, CHINA

by HSUN-YUAN YAO, M.D.[1]

PRIOR to 1925, the activities of the Mass Education Movement in China were mainly along the lines of large scale mass education campaigns and establishment of "People's Schools" for teaching illiterates. The ultimate objective of the Movement is, however, not merely to teach the illiterate millions to read, but to educate them for modern citizenship. In an attempt to find out what this education should be, an experiment was set up in Ting Hsien for discovering the most effective and practical system of education, using this restricted area as a unit which should serve as a pattern for the other districts or "hsiens" of China.

The four main problems of rural reconstruction, as the members of the Movement see it, are Ignorance, Poverty, Weakness (physical), and Selfishness. It is the function of the Department of Public Health to tackle the third problem; or, to put it in positive terms, its function is, as we say in Chinese, the building up of a strong virile people through the promotion of health education and the practical application of curative and preventive medicine. The inauguration of the Department is made possible through a generous grant from the Milbank Memorial Fund.

China is not a nation of big cities, but of hundreds of

[1]Dr. Yao is head of the Department of Public Health of the Chinese National Association of the Mass Education Movement.

This paper is a condensation of Dr. Yao's first annual report, covering the period September 1, 1929–June 30, 1930. For a statement as to the initiation of the health program of the "Ting Hsien Experiment" in educational, industrial, agricultural, and health progress, see the Milbank Memorial Fund *Quarterly Bulletin* for October, 1930, pp. 97–107.

"hsiens" or counties, each of which is a community unit. The culture and ways of living of one hsien, allowing for climatic differences, are essentially the same as those of another hsien. About 85 per cent of the Chinese population live in rural districts. Ting "Hsien," or county, is a typical Chinese rural district in North China, located about 170 miles south of Peiping along the Peiping-Hankow railroad. Topographically, Ting Hsien is a flat countryside, traversed with dirt roads designed for horse-cart transportation. These roads are possible for bicycles and, with a certain amount of repairing, small sized motor cars can be used. Politically, the Hsien is administered from a district magistrate's office responsible to the Provincial Government. Often there are three or four changes of magistrates in a year. It has a population of about 400,000, of which 13,556 are in the city and three suburbs and the remainder scattered in 472 villages. Each village has two village elders elected by the villagers. They are the responsible heads for official affairs. Politically, the Hsien is divided into six areas. The initial health program will be applied only to one of them, "The First Central Area," or the health demonstration area, which includes the City and the seventy-two villages around it. It has a radius of about six miles, with a population of approximately 50,000. The health activities will be extended to the other areas as soon as experience and personnel warrant.

Health Problems in Rural China

Over 90 per cent of the people were illiterate.[2] Most of them are poor, ignorant, and superstitious. They live in mud huts, blackened with soot and smoke, swamped with flies, mosquitoes, bedbugs, fleas, and rats. Even the so-called

[2] The verb "were" is in the past tense because a large amount of illiteracy in Ting Hsien has been wiped out since the Mass Education Movement began its work in 1927. *Ed. Note.*

middle class keep their domestic animals in the quarters where they sleep, cook, and eat. Their lives are haunted with frequent sickness and disease. The health knowledge of the people is low and the available medical facilities are nil. Modern medicine is a curiosity and public health is unheard of. In the whole county of 400,000 people there is not a single qualified modern trained physician. The annual death rate in China is probably about 30 per 1,000 population. The chief causes of controllable excess mortality are considered to be smallpox, gastro-intestinal diseases and tetanus neonatorum, and tuberculosis. Tuberculosis, however, is more dependent on the economic status of the people than the first three causes mentioned.

Since these three will yield more readily to comparatively simple health measures, they should be taken as the immediate specific problems to be attacked. The prevalence of gastro-intestinal diseases including dysentery, typhoid, and cholera, in all probability causing 400 deaths per 100,000, is due to the negligence of personal hygiene, and lack of pure water, and absence of proper means of disposal of human excreta. Tetanus neonatorum results from lack of proper midwifery. Deliveries are conducted on beds made of mud bricks by untrained persons with unwashed hands and long dirty fingernails. The cord is cut with unboiled scissors and the bleeding is controlled by applying mud or ash. Finally the cord is wrapped in dirty cotton and rags. Not infrequently two or three children die successively in the same family from tetanus. Maternal mortality is in all probability over 15 per 1,000 births. The cause is ascribed to winds by the common people. Smallpox is another important cause of mortality due to the fact that in China vaccination is only done once in one's life and often too late. The practice of vaccinating a baby with the material from a successful take

of another child is very common. Trachoma attacks at least 60 per cent of the people from the habit of using common washing facilities and the lack of knowledge and treatment of the disease.

The Ting Hsien Health Program

As to the policy of the Health Department we have seen no other statement as admirable as that made by Mr. Edgar Sydenstricker, director of the Division of Research of the Milbank Memorial Fund, after his intensive study of the work at Ting Hsien and many conferences with our staff members. Therefore I can do no better here than to make a résumé of his statement:

(1) The health program should not be considered as an isolated effort, but should always be interwoven with the other activities of the Movement in Ting Hsien because the success of the health work has much to do with concurrent progress of other activities.
(2) Since the principal aim of the health work is to discover a model rural health program, the experimental character of the work should be kept in mind all the time and in all phases of the health activities, without prejudice for or against any existing system elsewhere.
(3) While it is thoroughly realized that the cost of the experiment as such will be far beyond the ability of the local population to bear, the result which the experiment should strive to attain is a practicable program capable of duplication elsewhere in rural China under Chinese leadership without foreign financial aid.
(4) In view of the absolute lack of physicians, hospitals and clinics of the modern type, relief and curative facilities must be developed along with preventive measures.
(5) While the supervisory personnel must be drawn from other sources, the subordinate type of personnel should be recruited and trained locally for the purpose of ascertaining (a) what types of local health personnel can be devel-

Grocery shops on a Chinese village street

A health education mass meeting in Ting Hsien

oped locally and (b) how far they may be trained at local centers. This should be viewed from the standpoint of actual conditions in China without slavish adherence to the professional standards of the West.

(6) Proper provision should be made for measuring results of the experiment, especially in terms of decreased mortality from the incidence of diseases and conditions against which public health activities are specifically directed.

(7) Adequate provision should be made from the outset for determining the relative importance of the various health problems in various parts of China in order that the contributions which it is hoped will be made by the Ting Hsien experiment may be of national significance.

(8) It is deemed advisable to attack at first only a few problems in a small area and gradually take up other problems and extend the activities in a larger area.

Initial Organization of Medical and Health Services

The health activities of the year under review were mainly directed toward the setting up of a working machinery, the establishment of medical clinics, and the creation of public health consciousness in the people to pave the way for further activities.[3] Health education naturally received the greatest emphasis during the first year.

Personnel and Equipment. A small portion of the headquarters of the Mass Education Movement in Ting Hsien City was temporarily set aside for the Health Department. This consisted of a few rooms for use as clinics and offices. Since these quarters were wholly inadequate, plans for a health center, including a small hospital, were drawn up and work has been begun on the new buildings.

The personnel of the Department consisted of myself until October, 1929. By the end of June, 1930, two clinic assist-

[3] For a summary of the public health program, see the Milbank Memorial Fund *Quarterly Bulletin*, October, 1930, pp. 104–107.

ants, one public health nurse, one nurse and sanitary inspector, and one clerk had been added to the staff.[4]

Summary of Medical Services. The following is a statistical summary of the medical services rendered up to July 1, 1930 through clinics, calls, and laboratory work:

Summary of Medical Services Rendered

1. *Preventive Services:*	
Smallpox vaccinations	9,984
Physical examinations (complete)	128
Weight and height	20
Typhoid inoculation	244
Ante and post-natal examinations	18
Deliveries	3
Total	*10,397*
2. *Curative Services:*	
Operations	84
Change dressings	1,748
Eye treatments	1,159
Prescriptions	1,250
Dental treatments	6
Others	1,593
Total	*5,840*
3. *Laboratory Services:*	
Urine analyses	7
Stool examinations	3
Sputum examinations	2
Bacteriological examination of wells	26
Total	*38*
GRAND TOTAL	16,275

Clinic and Dispensary Work. In the general clinic, which

[4] Since July 1, 1930, the supervisory staff gradually has been increased, and the training of public health visiting aides, sanitary inspectors, and midwives has been begun in Ting Hsien.

was held every morning, all kinds of cases were seen. Cases of trachoma and patients requiring operative treatment were referred to the respective clinics. Of the 158 clinics conducted, 102 were for general, 20 for trachoma, and 36 for operative treatment. The daily attendance of the general clinic was about 40. Altogether there were 1,546 individuals seen, who made a total of 4,375 visits. One thousand nine hundred and eight conditions were treated and 6,141 medical services were rendered.

On May 12, 1930, a first aid station was opened in Niu-ts'un village about 8 *li*[6] southeast of the city. Regular clinics were conducted on Wednesday and Saturday mornings. A doctor takes charge one day and a nurse the other day. On clinic days, health lectures were given to the primary schools of that village. Ten clinics were conducted with 119 visits made by fifty-three patients. Fifty conditions were treated, resulting in 120 medical services.

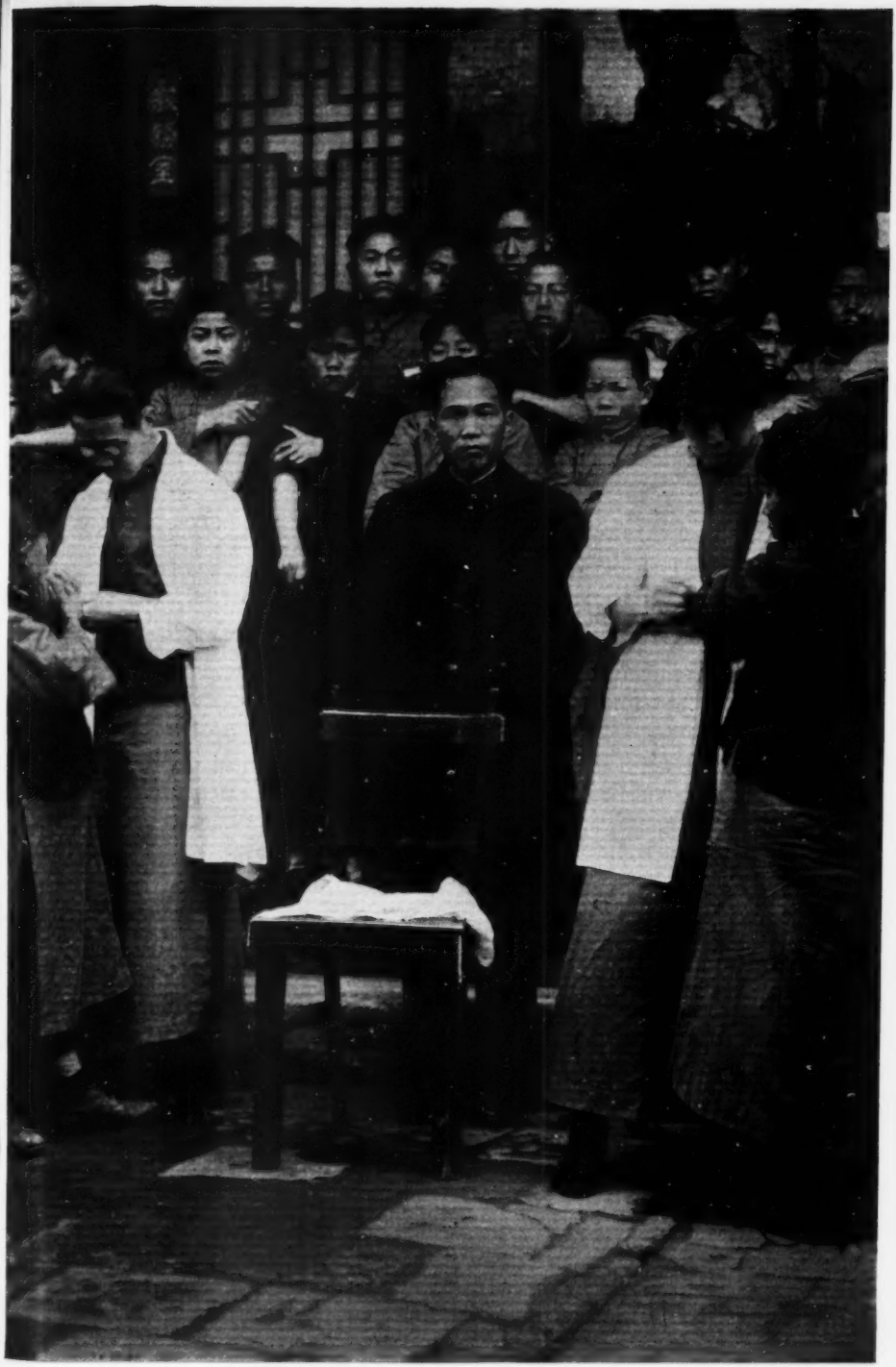
Investigation of Water Supplies. The water used in Ting Hsien is all obtained from shallow wells. These are generally poorly constructed, have badly fitting platforms that often are level with or even below the street surface, and are operated by hand. In September, 1929, twenty-six wells, which are used for drinking purposes, were investigated and a sample of water from each well was sent to the Peiping Union Medical College for bacteriological examination. Of the twenty-six wells, fifteen (58 per cent) contained *B. coli* of fecal origin. It is evident that the water from these wells, if unboiled, is unsafe for drinking purposes. The habit of drinking unboiled water, especially in the summer months, is very common among the farmers and school children in Ting Hsien. Water from these sources apparently plays an important role in the dissemination of gastro-intestinal diseases.

[6] One *li* is approximately one-eighth of a mile.

Immunization. It was decided to commence immunization measures by utilizing the confidence which the Chinese already possess in smallpox vaccination. For, although there is still a great deal of superstition and misinformation among the people about vaccination, the principle of it has been known in China for years. Persons are inoculated only once in their lives and often too late because it is done only in spring time and custom rules that the child must be more than one hundred days old. The inoculation is usually done with the serum from a successful take of another child without asceptic precautions. Thus smallpox is still quite a common disease in the country.

A vaccination campaign was launched in March, 1930. In order to reach the greatest possible number, the members of the Health Department enlisted the cooperation of students of the Training School of the Movement, of the People's Schools and the Men's Normal Schools in the City. After these students were taught the principles and methods of vaccination, they themselves were vaccinated. Under supervision they in turn vaccinated their schoolmates. Then they were taken out to vaccinate children in other schools. The multiple puncture method was employed, no dressing being applied. After this period of training the student helpers were organized into teams to do vaccination in the villages assigned them. Each team was provided with a vaccination outfit consisting of sewing needles, cotton balls soaked in alcohol or Chinese wine in a tightly closed can, vaccine tubes, clean towels, pencils, and report blanks.

With the help and cooperation of the older departments of the Movement and the People's School graduates, the propaganda work of the Local Health Committee and the financial assistance of the Hsien government, the campaign was a great success. Within a month's time, 21,605 people were



Vaccination day in Ting Hsien—Dr. Yao at left

Dr. Yen (right) and one of his principal allies

vaccinated, 9,984 of whom were vaccinated by members of the Movement.

Of the 9,984 people vaccinated, 2,087 or 20.7 per cent had had no previous vaccination and most of them were older than 12 months. Seven thousand, three hundred and ninety-one or 74.1 per cent had had only one vaccination before and many of them had very little or no immunity against the disease. This is shown by a study of their reactions after vaccination. Inspection and readings were made on 1,000 students whose age varied from 5 to 17 years and who had had only one vaccination in infancy. It was found that 38.7 per cent showed immediate reaction, 30.4 per cent showed accelerated reaction and 30.9 per cent showed reaction or primary vaccination.

An enquiry was also made of 540 unselected people in regard to the frequency of the occurrence of smallpox. It was found that 35 (6.4 per cent) had had the disease; 24 (4.4 per cent) out of these 35 never had any vaccination and 11 were vaccinated only once during infancy. If this sample is representative, about 3,000 people in the health demonstration area have been attacked by smallpox.

School Hygiene. School health work was begun in the Mass Education Training School for teachers. Physical examinations, vaccinations, and typhoid inoculations were done. The dormitories and kitchen were regularly inspected. In addition, a course on principles of public health was offered. The students were also taught the methods of vaccination, first aid, and the treatment of trachoma. As a part of their practical training, they participated in the health and vaccination campaigns.

Health work was also conducted in the kindergarten opened in April, 1930, under the auspices of the Movement. There were twenty students, mostly children of the staff of

the Association. Physical examination, smallpox vaccinations, and periodical weighing and inspection were carried out. Cooperation of the parents was encouraged through meetings and letters.

School health work has been done in the public primary schools in Niu-ts'un since the opening of the clinic in that village. Health classes were conducted once a week. Physical examinations and vaccinations were done. Arrangements were made for correcting defects. There has been a great improvement of the sanitation in the school. More windows were opened, the walls were white-washed, the toilets were made cleaner, and boiled water was provided for the students.

Beginnings of a Nursing Service. The nursing service began with a staff of a man nurse trained in clinical nursing and a woman nurse trained in public health nursing. The latter joined the Department in March, 1930. They participated in all the health activities in the clinics, school health clubs, and educational campaigns. In addition, a beginning has been made in home visiting. Regular visits have been made in the homes of the staff and of the people living in one of the streets near the Association. Altogether there were 345 visits made.

Health Education

The educational and agricultural activities of the Movement carried on since 1926 in Ting Hsien had won the confidence of the people and local government. A large number of Mass Education Schools, or "People's Schools," had been established and training schools for teachers had been provided. The basis and, to a considerable extent, facilities for creating interest in health thus had been provided when the Health Department was begun in 1929.

The health education work up to July 1, 1930, is summarized in Table 1:

Activities	Number	Attendance
Health lectures	304	42,826
Health classes	153	5,101
Health conference	40	415
Mothers' health club	7	59
Children's health club	8	91
Talks	1,328	3,948
Home visits	345	744
Campaigns	3	12,500
Dramas	3	800
Total	*2,190*	*66,484*

Other Activities

Posters and pamphlets distributed (19 kinds)	64,053 sheets
Newspaper items	18
Newspaper article words	8,280

Table 1. Health education work in Ting Hsien, China, prior to July 1, 1930.

Among the various popular educational activities that were carried on from September 1, 1929, to July 1, 1930, the following deserve especial mention:

In order to create a popular interest and social consciousness of the importance of a health program in Ting Hsien, a two-day health campaign was launched on November 12 and 13 utilizing the experience of our "Literacy Campaigns" of former years. Thanks to the cooperation of all the departments of the Movement, the People's Schools, governmental schools, the gentry, the local government and even the army stationed nearby, the campaign was a decided success.

During December, 1929, and January, 1930, the Department of Public Health cooperated with the Department of Agriculture in an extension project known as "The Farmers' Travelling School," which operated successively in six selected market villages, spending a week in each. There were illustrated lectures, exhibits, and moving pictures, and the representatives of the Department of Public Health, besides

giving a series of health lectures, did vaccination and clinic demonstrations. Women secretaries produced a health play which was entertaining and instructive. Attendance was always good, many people coming from neighboring villages. These were experimental campaigns for the purpose of finding out what sort of methods or arousing interests was most successful.

The fly, dangerous as it is, is considered by most of the people as harmless and even beneficial in the home as there is a misconception that food left over in the summer, if not eaten by flies first, will be poisonous to man. In order to make the people realize the true nature of this insect, an anti-fly campaign was carried out last summer. Besides the usual posters, demonstrations and lectures, the wholesale killing of flies in the city was encouraged with medals and prizes, and in the villages by setting up a fly market in the Health Department at the rate of two coppers per hundred flies. Children came with captured flies from villages even 10 *li* away. At first they thought flies were bought for medicinal purposes. When they were told the truth they were amazed and incredulous and some of them left their flies with us without even asking for their coppers! Police on their own initiative started to persuade peddlers to protect their foodstuffs against flies and fly cages appeared on the streets.

In the fall of 1929, upon the request of General Wen whose army was stationed nearby, a training course in mass education was given to the 130 officers under him. Health was one of the subjects given. These officers, after their training, started mass education among their soldiers. It has been mentioned how they helped in the city health campaigns. In the streets the soldiers always give us the military salute and called us their "Big Teachers."

Last spring a Mass Education Training Institute was held

for Christian leaders from various parts of China, as far south as Canton and as far north as Moukden. Inspired by the work of the Movement, several churches in China have decided to carry on mass education work among their members. All the departments took part in the training. As a manifestation of their interest in our health scheme, the American Board Mission in Paotingfu is going to open three rural health courses for their evangelists under the direction of this Department.

Two conferences for village elders were conducted by our Education Department, one in K'ao P'eng and the other in Chai-ch'eng. Health lectures were also given, and when the elders were told about bacteria, the cause of tetanus neonatorum, and the danger of the fly, they were very much surprised, as these things were unknown to their forefathers.

Last winter, the students of our Training School, as a part of their practical training, started a number of "Lantern Classes." These classes were conducted every evening in the open air on the streets, and the students were the people in the neighborhood. Men and women, young and old, were equally admitted. The lanterns were very large, the texts of the lessons painted on them, new characters on one side, and the illustration on another. The people gathered around and listened to the accompanying lectures, health being one of the topics. This method was found to be very effective for holding the audience, many attending the lectures regularly. In the experimental People's Schools health talks were given weekly with the object of finding out what material and what presentation were most suitable. These talks were accompanied with practical demonstrations. Since April, 1930, a Children's Health Club has been conducted for the purpose of finding out the best methods of training children to form wholesome health habits.

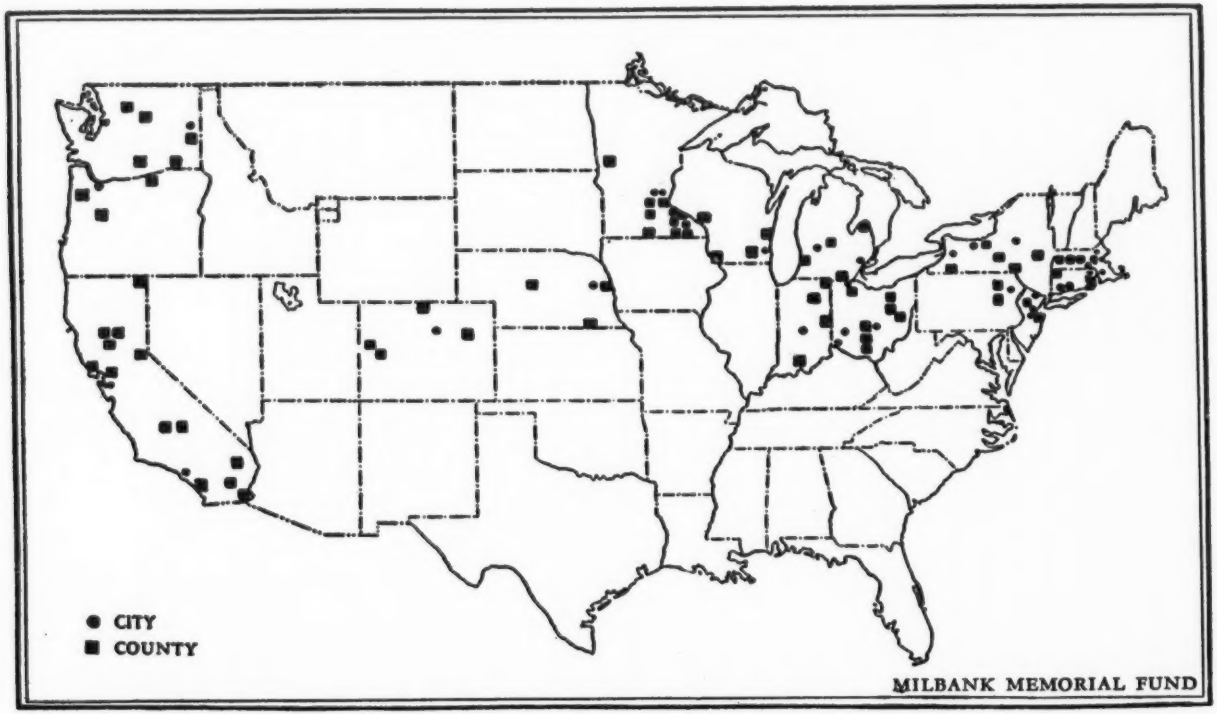


Fig. 1. Map of the United States showing the location of the cities and counties from which the urban and rural samples were taken.

DIFFERENTIAL FERTILITY ACCORDING TO GEOGRAPHIC AREAS IN THE UNITED STATES[1]

by KATHARINE BERRY

DIFFERENCES in human fertility according to race, social classes, economic conditions, education, religion, urbanization, and density have been studied more or less intensively by various students in this country. Although these conditions have not always been defined with as much precision as might be desired, and their interrelations have not been fully explored, the general results of an accumulating series of inquiries indicate that there are important environmental and possibly genetic factors which should be taken into account in any adequate consideration of fertility and birth rates, of the size of the family, and of other related questions involved in what are commonly spoken of as "population problems."

It is the purpose of this paper to report upon an inquiry into differential fertility according to another condition and possible factor, namely, geographic sections of the United States. No particular hypothesis as to the reasons for a differential fertility of this kind has been set up, for, as it will be seen, the data here utilized will not permit of any exact determination of the effect of the various factors possibly involved, whether they be climatic, dietary, economic, or other. It will be feasible, however, to hold constant in a general way certain factors—race, social class, and urbanization—which are known to be associated with differences in fertility rates. Within these deliberately imposed limitations, therefore, it will be possible to ascertain whether or not there are differential fertility rates according to certain broadly

[1] From the Division of Research, Milbank Memorial Fund.

defined geographic sections which are not associated with the three conditions mentioned.

The existence of a geographic differential fertility is suggested but not proved by certain birth statistics issued by the Bureau of the Census. For example, the average number of children ever born to native women who gave birth to children in 1927[2] suggests a relatively low fertility (less than three children per mother) in Connecticut, New York, New Jersey, Ohio, Illinois, California, Oregon, and Washington, and a relatively high fertility (more than 3.2) in the Mountain States and the South. But these statistics include neither women who had failed to bear any children nor those who bore no children in 1927, do not take into account possible differences in age of mothers at marriage and in 1927, and include women of mixed parentage. Thompson[3] has used the published census material in another way. By comparing the number of children under five years of age per 1,000 native white women 20–44 years of age in urban and rural areas of different sections of the United States, he indicated the existence of differential fertility rates according to geographic location. As will be indicated, the nature of these differences was similar in general to those found by the present study.

The present inquiry attempts a more definite approach by utilizing the records of samples of women drawn at random from the original schedules collected by the 1910 census from 33 cities having populations ranging from 100,000 to 500,000 and from 74 counties adjacent to these cities. (Fig. 1.) It will be recalled that the 1910 census included for each

[2] Birth, Stillbirth, and Infant Mortality Statistics: 1927, Bureau of the Census, Table J, page 16.

[3] Unpublished census monograph "Ratio of Children to Women in the United States," by W. S. Thompson, quoted in the Preliminary Report of the White House Conference on Child Health and Protection, Table 33, p. 48. See also his paper on "Size of Family from which College Students Come," *Journal of the American Statistical Association*, December, 1925 (XX: 481–495).

married woman information as to the number of children born, the number of children still living, the number of times married, the length of present marriage, age of the woman at marriage, the nativity of herself and of her parents and of her husband and his parents, and the occupation of her husband. The samples were limited to wives in families in which both husband and wife were of native white parentage and but once married. The rural sample was confined to families living on farms. The geographic areas represented were New England, Middle Atlantic, East North Central, West North Central, Mountain, and Pacific. The occupational record of the husband permitted a classification into broad social classes.[4]

Tables 1 to 5 give the essential tabulations of these data for urban and rural areas within each geographic section selected. It should be noted that since in the New England States, only Massachusetts, Rhode Island, and Connecticut, and in the Mountain States only Colorado, had cities of more than 100,000 and less than 500,000 in 1910, the samples for these areas are lacking in certain states usually included in these two divisions. Furthermore, it seemed desirable to present the data for New York State separately since a more detailed analysis indicated that its birth rates were dissimilar to those of New Jersey and Pennsylvania. The Pacific area is broken up into two units, the data for California being separated from those of Washington and Oregon. Since the sub-division of the data according to geographic areas resulted in rather small numbers in the more specific social classes used in previous studies[4] of this material, it seemed rather desirable to combine the professional and business classes in the cities into a group which may be termed the

[4] Edgar Sydenstricker and Frank W. Notestein, "Differential Fertility According to Social Class," *Journal of the American Statistical Association*, March 31, 1930, pp. 9–32.

Children Born, Wives, and Children Born per 100 Wives for Urban Areas	Age of Wife at Census of 1910						
	Under 45	Under 20	20–24	25–29	30–34	35–39	40–44
Children born							
New England	3,560	*	186	551	788	1,027	1,000
New York	7,133	*	607	1,412	1,669	1,770	1,639
New Jersey & Pa.	4,029	*	301	761	902	919	1,131
East North Central	21,427	189	2,091	4,279	5,007	5,074	4,787
West North Central	4,523	*	285	784	1,039	1,148	1,243
Mountain	3,787	*	240	655	907	933	1,029
California	7,661	*	680	1,327	1,758	1,973	1,868
Washington & Oregon	7,383	*	723	1,358	1,594	1,945	1,721
Wives							
New England	2,239	*	230	468	514	539	470
New York	4,810	*	725	1,236	1,085	943	755
New Jersey & Pa.	2,324	*	329	571	496	456	435
East North Central	12,737	353	2,287	3,203	2,808	2,287	1,799
West North Central	2,825	*	437	675	614	560	479
Mountain	2,276	*	353	504	540	441	379
California	5,381	*	903	1,271	1,221	997	842
Washington & Oregon	4,610	*	861	1,164	961	858	641
Children born per 100 wives							
New England	159	*	81	118	153	191	213
New York	148	*	84	114	154	188	217
New Jersey & Pa.	173	*	91	133	182	202	260
East North Central	168	54	91	134	178	222	266
West North Central	160	*	65	116	169	205	259
Mountain	166	*	68	130	168	212	272
California	142	*	75	104	144	198	222
Washington & Oregon	160	*	84	117	166	227	268

*Not shown because births and birth rates are based on less than 100 wives.

Table 1. Children born, wives, and children born per 100 wives by age of wife at census, for each urban area. In order to obtain an adequate sample of the professional class it was necessary to search three times as many schedule pages as were used for the other urban classes. For that reason the data for the professional class are given one-third their actual weight.

"white collar workers" and the skilled and unskilled laborers into a group which may be denoted as "laborers." Although such classification permits a rather wide margin of economic

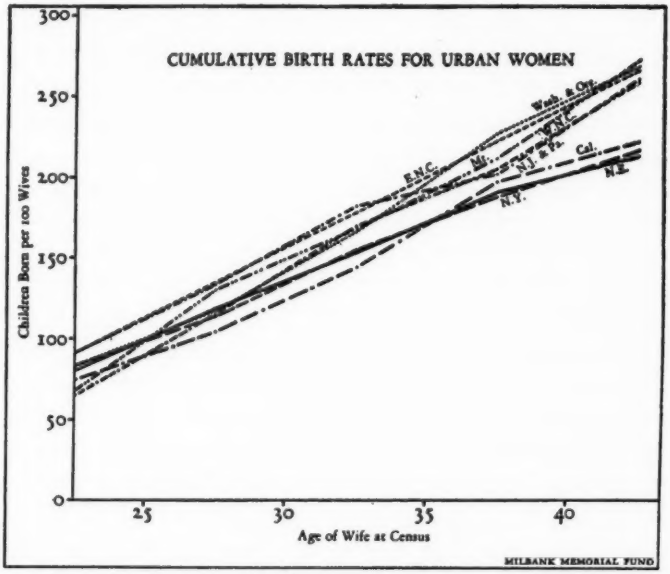


Fig. 2. Total number of children ever born per 100 wives in quinquennial age group under 45, for urban geographic area.

well-being within each of the two classes, it seems reasonable to regard the division as a real one in view of the fact that there are certain obvious differences in standards of living, education and achievement between the two classes. No specific rural social classes could be considered since the farm owner class is the only one for which sufficient numbers were available in each of the geographic areas, and the farm owners dominate the entire rural sample.

Two indices of fertility are used in presenting the results of this study: (1) the cumulative birth rate at specific ages of women in terms of the total number of children born per 100 wives by quinquennial age groups for each area; (2) a cumulative birth rate standardized according to the age distribution of the wives in the entire sample.

Although the cumulative birth rates here presented are only for women up to 45 years of age, the curves plotted in Figures 2–5 clearly reflect two facts. One is the growth of the family during the childbearing period of the woman. If this was the only fact portrayed, however, the curves should reach a horizontal asymptote at the end of the childbearing period. A second fact is that such an asymptote is not reached nor even approached in any of the areas or social classes. The obvious explanation is that the older women who had entered their childbearing period as far back as 1880, had borne children more rapidly in the earlier part of their married life than those who entered the childbearing period later. In other words, a secular trend appears in all of the fertility rates here presented. How much of the accumulated rates in the age period 40–44 years is due to secular trend is not important for the purpose of this particular study. The two facts are mentioned to emphasize the fact that we are not dealing with a static condition but are employing a cross section, taken in 1910, of a changing fertility.

Considering now the indications yielded by the data presented in the light of the foregoing limitations, we may observe:

1. The fertility rates of rural women were higher than those of urban women in every geographic section considered.

2. In the East the fertility rate of women on farms was about 50 per cent higher than that of women living in cities, whereas in the West it was about 75 per cent higher. The ratios of the rural rates to the urban rates—both standardized for age—varied from 1.47 to 1.56 in the Eastern section of the country and from 1.72 to 1.91 in the Western section.

3. The fertility rates of urban women in the various geographic sections showed a somewhat smaller relative varia-

tion than the fertility rates of rural women. The range in the rates standardized for age in the urban areas was from 147 to 173 per 100 women, or 18 per cent, whereas the range of the rates for rural areas was from 219 to 301, or 37 per cent.[5]

4. In considering further the general differences between the Eastern and Western sections of the country, two rather interesting exceptions may be noted. For the cities in the East North Central states and New Jersey and Pennsylvania, the standardized rates for age are higher than the rates for the Eastern area. In fact, the standardized rate for the East North Central section is the highest of all the areas, and that of New Jersey and Pennsylvania is next highest. This exception, however, is not reflected in the rural areas of the same states. The other exception is that of California. The fertility rates of women in this State are consistently lower than those of other areas in the Western section for both cities and farms.

5. When the women in the urban areas are roughly classified according to the social status of their husbands, it appears that the white collar class had a higher fertility rate

[5] Thompson's studies, already referred to in footnote 3 (page 80), suggested differences in urban and rural fertility rates according to geographic divisions as follows:

Indices of the number of children under 5 per 1,000 native white women 20–44 years of age in communities of different size, by division, 1920.

Ratio of children in cities of 100,000 and over for the whole United States=100.

Area	Cities 100,000 and Over	Rural Districts
New England	94.4	154.8
Middle Atlantic	100.3	172.4
East North Central	105.6	187.4
West North Central	96.2	199.4
Mountain	104.4	227.3
Pacific	78.6	165.1

Children Born, Wives, and Children Born per 100 Wives in Rural Areas	Age of Wife at Census of 1910						
	Under 45	Under 20	20–24	25–29	30–34	35–39	40–44
Children born							
New England	3,396	*	225	466	631	972	1,090
New York	7,125	*	564	1,125	1,625	1,954	1,811
New Jersey & Pa.	3,598	*	196	467	797	998	1,107
East North Central	29,042	255	2,330	4,971	6,778	7,122	7,586
West North Central	6,288	*	461	1,058	1,285	1,646	1,800
Mountain	4,337	*	324	699	1,006	1,167	1,096
California	9,908	70	714	1,562	2,078	2,668	2,816
Washington & Oregon	8,858	50	743	1,424	2,003	2,320	2,318
Wives							
New England	1,373	*	160	234	271	340	344
New York	3,183	*	521	657	688	680	557
New Jersey & Pa.	1,381	*	184	262	315	313	260
East North Central	11,247	471	1,991	2,477	2,349	2,062	1,897
West North Central	2,108	*	369	474	423	393	367
Mountain	1,539	*	270	343	324	295	240
California	3,931	124	614	832	819	820	722
Washington & Oregon	3,103	117	567	709	642	574	494
Children born per 100 wives							
New England	247	*	141	199	233	286	317
New York	224	*	108	171	236	287	325
New Jersey & Pa.	261	*	107	178	253	319	426
East North Central	258	54	117	201	289	345	400
West North Central	298	*	125	223	304	419	490
Mountain	282	*	120	204	310	396	457
California	252	56	116	188	254	325	390
Washington & Oregon	285	43	131	201	312	404	469

*Not shown because births and birth rates are based on less than 100 wives.

Table 2. Children born, wives, and children born per 100 wives by age of wife at census, for each rural area.

in the Western areas than in the Eastern, if California again be regarded as an exception. The fertility rate of the laboring class does not follow so clearly this line of demarcation between East and West. In fact, the highest fertility rates of the laboring class are found in New Jersey and Pennsylvania and

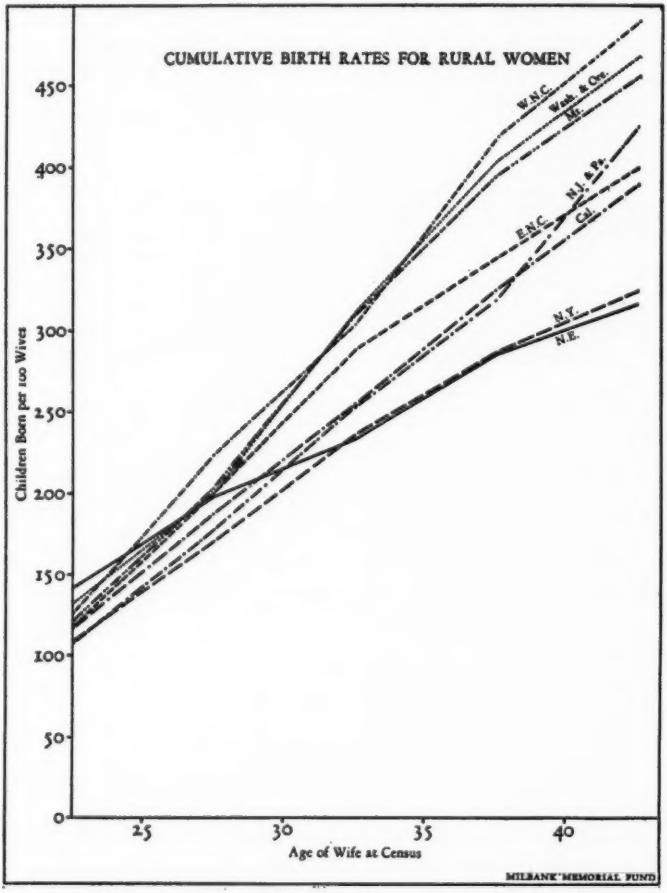


Fig. 3. Total number of children ever born per 100 wives in quinquennial age groups under 45, for rural geographic areas.

in the East North Central States, and the lowest are in New England, New York, and California. It might be suggested that the dominance of manufacturing and mechanical workers and miners, which are highly fertile groups, in the total

Children Born, Wives, and Children Born per 100 Wives for White Collar Workers	Age of Wife at Census of 1910						
	Under 45	Under 20	20-24	25-29	30-34	35-39	40-44
Children born							
New England	1,971	*	70	275	465	585	574
New York	3,668	*	212	582	876	1,024	963
New Jersey & Pa.	2,053	*	114	347	462	537	585
East North Central	8,490	*	528	1,493	2,007	2,210	2,222
West North Central	3,150	*	145	541	719	803	937
Mountain	1,892	*	90	303	445	493	555
California	3,854	*	300	618	911	1,014	990
Washington & Oregon	3,563	*	238	619	770	1,019	911
Wives							
New England	1,341	*	104	274	319	344	294
New York	2,682	*	301	647	640	598	482
New Jersey & Pa.	1,357	*	159	317	293	308	263
East North Central	5,767	*	782	1,361	1,358	1,207	979
West North Central	1,994	*	259	479	453	406	375
Mountain	1,233	*	155	278	299	260	224
California	2,974	*	465	686	699	577	489
Washington & Oregon	2,404	*	372	617	525	491	369
Children born per 100 wives							
New England	147	*	67	100	146	170	195
New York	137	*	70	90	137	171	200
New Jersey & Pa.	151	*	72	109	158	174	222
East North Central	147	*	68	110	148	183	227
West North Central	158	*	56	113	159	198	250
Mountain	153	*	58	109	149	190	248
California	130	*	65	90	130	176	202
Washington & Oregon	148	*	64	100	147	208	247

*Not shown because births and birth rates are based on less than 100 wives.

Table 3. Children born, wives, and children born per 100 wives by age of wife at census, for white collar workers in each area. In order to obtain an adequate sample of the professional class, it was necessary to search three times as many schedule pages as were used for the other urban classes. For that reason the data for the professional class are given one-third their actual weight.

populations of occupied males of Newark and Scranton, for example, is an indication of what a more detailed analysis would show.

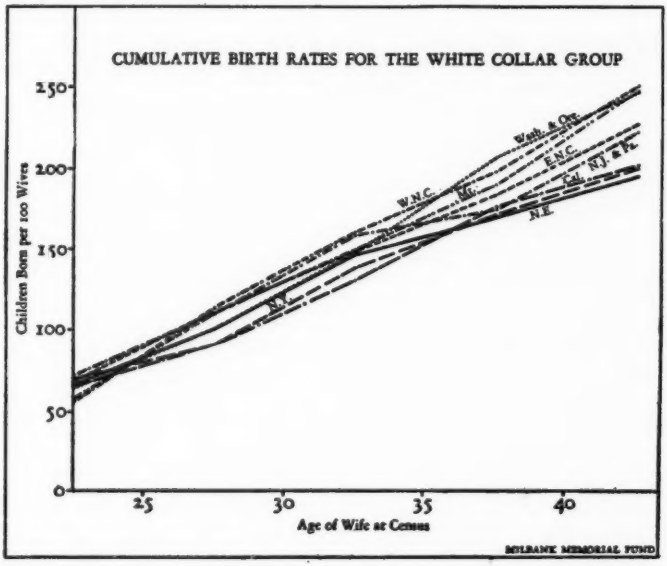


Fig. 4. Total number of children ever born per 100 wives in quinquennial age groups under 45, for the "white collar" group in different geographic areas.

6. The white collar workers had smaller families in every area than the laborers. In fact, the families of the white collar workers in the West North Central States, where the highest fertility rate was shown for this class, are smaller than the families of laborers in California, for which the lowest rates were shown in the laboring class. The white collar workers as a group appeared to be affected less by factors associated with geographic location than did the laboring class. In the former the highest rate exceeds the lowest rate by 17 per cent, whereas in the latter the highest rate exceeds the lowest by 26 per cent.

Although the material used in this study does not permit us to go behind the indications summarized above, it is hard

Children Born, Wives, and Children Born per 100 Wives for Laboring Class	Age of Wife at Census of 1910						
	Under 45	Under 20	20-24	25-29	30-34	35-39	40-44
Children born							
New England	1,589	*	116	276	323	442	426
New York	3,465	*	395	830	793	746	676
New Jersey & Pa.	1,976	*	187	414	440	382	546
East North Central	12,937	159	1,563	2,786	3,000	2,864	2,565
West North Central	1,373	*	140	243	320	345	306
Mountain	1,895	*	150	352	462	440	474
California	3,807	*	380	709	847	959	878
Washington & Oregon	3,820	*	485	739	824	926	810
Wives							
New England	898	*	126	194	195	195	176
New York	2,128	*	424	589	445	345	273
New Jersey & Pa.	967	*	170	254	203	148	172
East North Central	6,970	273	1,505	1,842	1,450	1,080	820
West North Central	831	*	178	196	161	154	104
Mountain	1,043	*	198	226	241	181	155
California	2,407	*	438	585	522	420	353
Washington & Oregon	2,206	*	489	547	436	367	272
Children born per 100 wives							
New England	177	*	92	142	166	227	242
New York	163	*	93	141	178	216	248
New Jersey & Pa.	204	*	110	163	217	258	317
East North Central	186	58	104	151	207	265	313
West North Central	165	*	79	124	199	224	294
Mountain	182	*	76	156	192	243	306
California	158	*	87	121	162	228	249
Washington & Oregon	173	*	99	135	189	252	298

*Not shown because births and birth rates are based on less than 100 wives.

Table 4. Children born, wives, and children born per 100 wives by age of wife at census, for laboring class in each area.

to resist the temptation to speculate somewhat as to the possible effects of certain conditions that have been suggested by other studies as having a bearing upon the facts here presented.

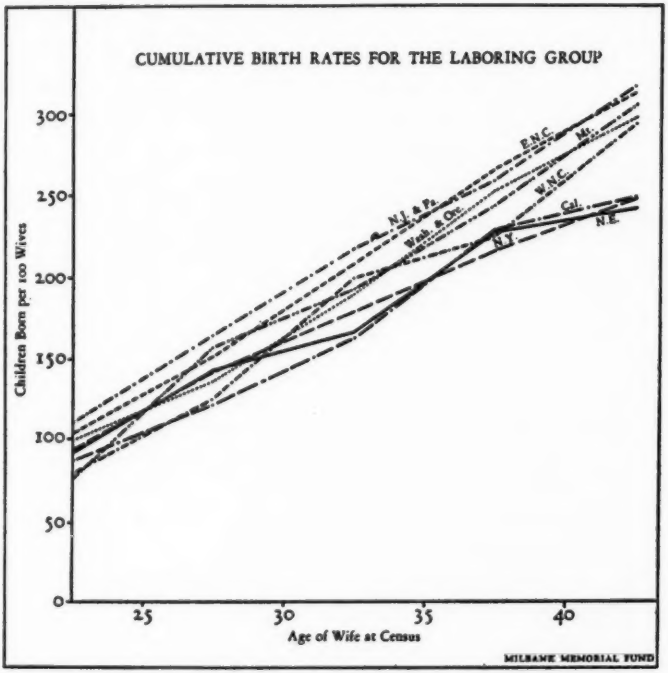


Fig. 6. Total number of children ever born per 100 wives in quinquennial age groups under 45, for the "laboring" group in different geographic areas.

The greater variations in the fertility rates of rural women than in those of urban women naturally raise the question of whether or not urbanization *per se* had, even prior to 1910, a leveling or standardizing effect upon the birth rate. If we can assume that the real geographic differentiation in fertility is more accurately exemplified by rural rates than by urban, and that the cities draw most of their population from adjacent territory, this effect of urbanization might be indicated. The fact that the variation in the fertility rates for the laboring group is greater than that of the white collar

	Total Urban	Total Rural	White Collar Workers	Laboring Group
Total Area	*160*	*260*	*139*	*187*
New England	147	229	132	169
New York	147	219	130	170
New Jersey & Pa.	168	247	143	206
East North Central	173	262	143	201
West North Central	158	301	150	178
Mountain	165	288	146	189
California	143	246	128	164
Washington & Oregon	166	292	147	187

Table 5. Standardized cumulative birth rates for the urban and rural groups and for the urban social classes in the geographic areas.

group might be considered as in line with an explanation of this sort upon the assumption that the latter are more completely urbanized than the former. But here other factors than the fact of merely living in cities may be operative, such as differences between the two groups in education, intellectual interests, social conventions, and inheritance.

The fact that in rural areas of the West the fertility rates were higher than those in the East is an invitation to further study of the possible bearing of other differences in the two sections, such as in social conventions, in the character of the food supply and dietary habits, in the economic condition of farm families, or in the demand for farm labor arising out of differences in crops and size of farms. The possibility that the principal factors responsible for a declining birth rate operated in the East before they did in the West prior to 1910, is another interesting hypothesis. Other questions suggest themselves, such as: Do the metropolitan centers of the East and Chicago exercise an influence upon the adjacent rural territory with respect to size of family that

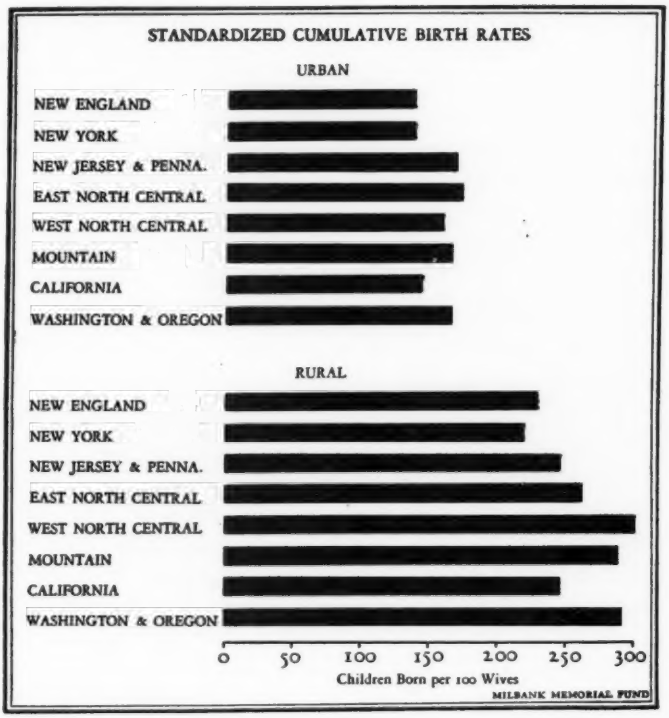


Fig. 6. Cumulative birth rates for women under 45 in urban and rural samples of different geographic areas, standardized for the wife's age by applying the rate for each quinquennial age group to the age distribution of the total number of wives under 45 included in the study.

is not felt in sections where such centers do not exist? Is the relatively low fertility rate of California women, which stands out as such an exception to the higher rates that prevail in other Western areas, in any way associated with the unusual origin of so large a portion of the California population, or with the fact that California is a resort section? To what extent are these differential fertility rates

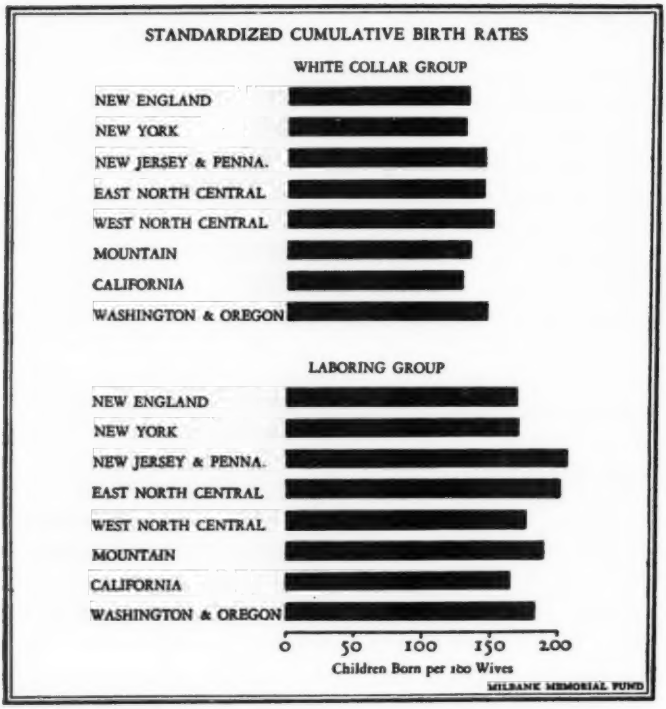


Fig. 7. Cumulative birth rates for women under 45 in "white collar" and "laboring" groups of different geographic areas, standardized for the wife's age by applying the rate for each quinquennial age group to the age distribution of the total number of wives under 45 included in the study.

due (1) to voluntary limitation of the size of the family, (2) to "birth control," prior to 1910?

There is here a challenge to further research in order to discover the important factors that have influenced the human fertility rate and to evaluate more precisely their effects upon the changing composition of our population.

PRENATAL CARE OF RURAL MOTHERS[1]

by DOROTHY G. WIEHL

AN unusual opportunity to obtain information from a representative group of rural mothers on the amount of prenatal supervision by doctors or public health nurses was afforded by the collaboration of the Milbank Memorial Fund with the United States Public Health Service in the special epidemiological studies being made in a rural area of Cattaraugus County, New York. Continuous observation of nearly all families living in five rural townships and one small incorporated village, a total population of about 5,000, renders it possible to collect special information about the medical attention received by practically all women who bear children within the period of study. Other studies have been based on a special investigation of maternal and neo-natal deaths or on maternity cases registered in clinics, with nursing organizations or hospitals. Such studies have been of real value, but give no data for the large numbers of mothers who did not die or were not assisted by any special organization. In this study certain data relating to health and medical supervision in the prenatal period were obtained from an *unselected* group of mothers in a typical rural community. It is believed that this study is unique in this respect.

This report presents a preliminary analysis of 137 pregnancies for which prenatal records were obtained during 1930. Some of the births had occurred as early as March, 1929, and the most recent ones were in November, 1930. Accordingly, this series of pregnancies does not give a complete record of births for a given population over a definite period of time.

[1]From the Division of Research, Milbank Memorial Fund.

The study is still in progress, and, at a later date, a more complete analysis will be made.

The mother was asked to give information on the following: month of pregnancy in which a physician was first consulted and number of visits; reasons for not having prenatal care; supervision by the public health nurse; sickness during the prenatal period; the number of previous pregnancies and whether they resulted in miscarriages, premature births or stillbirths; attendant at delivery for previous births; attendant at this delivery; and complications. No data are available from the physician as to the nature of the medical care given or as to the health of the mother; the information on these points is not so precise as could be desired. This analysis is primarily concerned with the quantity of service and opportunity of the doctor to give service.

Of these 137 pregnancies, one terminated in a miscarriage at 5½ months, seven in stillbirths, and the remainder in live births. The number of stillbirths gives a rate nearly twice as high as in the County as a whole, but this presumably was a chance occurrence since the official statistics for previous years do not indicate an unusually large number of stillbirths in this area. All births except three were attended by a doctor; one of the three was attended by a midwife, one by the mother's mother and one by a neighbor. Nine mothers went to a small maternity home in the village, and fifteen went to a hospital outside the area for confinement.

Prenatal Care. Within this area there were only three resident physicians but many others were easily available. One section of the area borders on the city limits of Salamanca, a city of approximately 10,000 population, and other sections are not far from villages where there are doctors. Ten miles is about the maximum distance from any home to a doctor. The County has had a County Health Department since 1923

with a generalized nursing service. The nursing service has been much in excess of that provided by the usual County Health Unit, with one nurse for every 3,000 to 4,500 population. This section of the County had the full-time service of one nurse and about one-half time of another during the period covered by this record. Undoubtedly many mothers in the area had had the benefit of instruction by the nurses on the value of adequate care during pregnancy. No prenatal clinics were held in the district, the official health services being limited to those given by the public health nurse. During the two years preceding the period of record, there was a medical director for maternal and infant hygiene in the County who carried on special educational activities throughout the County.

Forty-four per cent of the mothers in our area registered with a doctor before they were five months pregnant, and 30 per cent did not consult a physician before their confinement. The proportion of mothers who consulted a physician in specific months of pregnancy is shown in Table 1. Similar data are not available for any comparable area, but it is believed that this is an exceptionally good record.

Table 1. Month of pregnancy in which 136 mothers first consulted a physician.

Month of Pregnancy	Number of Mothers	Per Cent of Total
Total	*136*[1]	*100.0*
1-2	24	17.6
3-4	36	26.5
5-6	19	14.0
7-9	16	11.8
No prenatal care	41	30.1

[1]The month of pregnancy was unknown in one case.

Not all who consulted a doctor in the first few months of pregnancy, however, returned for periodic examination, as is shown in Table 2. In fact, sixteen of the seventy-eight mothers who went to a physician before the seventh month

Month of First Visit	Number of Women Reporting Stated Number of Visits				Per Cent Who Reported Stated Number of Visits			
	Any No.	1-2	3-4	5+	Any No.	1-2	3-4	5+
Any month	*93*	*28*	*18*	*47*	*100.0*	*30.1*	*19.4*	*50.5*
1-2	23	1	0	22	100.0	4.3	0	95.7
3-4	36	8	7	21	99.9	22.2	19.4	58.3
5-6	19	7	9	3	100.0	36.8	47.4	15.8
7-9	15	12	2	1	100.0	80.0	13.3	6.7

Table 2. Number of visits to physician for prenatal care according to month of first visit.

of pregnancy were seen by him not more than twice before confinement and can be definitely classified as having had inadequate prenatal care. In these cases the doctor had an opportunity to urge the mother to have continuous prenatal care; but either the doctor failed to present the necessity of care or he was unable to overcome the apathy of the patient. In either case the need of educating these mothers and possibly some of the doctors as to the value of adequate prenatal care is indicated, although it is known that some physicians in the County set a high standard of prenatal care and require their patients to have regular health examinations.

According to the number of prenatal visits to the doctor and the month of the first visit, the cases have been grouped upon the basis of generally accepted standards into three classes, as follows: (1) those having no prenatal care by a doctor; (2) those having *insufficient* care, which includes all mothers who first consulted a physician after the sixth month of pregnancy, and also those who consulted a physician before the sixth month but failed to see him more than twice

before confinement; and (3) those having *fair* or *good* prenatal care which includes mothers who consulted the doctor before the seventh month and made three or more visits. Under such a classification, it appears that slightly less than one-half of the mothers (46 per cent) had fair or good prenatal care, one-fourth had insufficient care and 30 per cent had no medical care.

The public health nurse visited 48 or 35 per cent of the mothers at least once during the prenatal period. Of the 41 who had no medical care only 8 (20 per cent) had some nursing supervision while of the 63 who had fair or good care 46 per cent were visited by the nurse, as is shown in Table 3. The difference can be explained by the fact that a large number of those who received nursing supervision had been referred to the nurse by the doctor. In a rural area, the difficulties of case finding are even greater than in urban communities, and special efforts are necessary for any notable success.

Economic Status and Prenatal Care. The amount of prenatal care varied directly with the economic status of the families. The economic status used is that given by the investigator and is based on the general impression formed after the family had been visited several times. The prenatal care received by women of different economic status is given in Table 4. Of those classed as in "comfortable" circumstances, all had some prenatal care, and only one-sixth fall in the "insuffi-

Table 3. Prenatal supervision by public health nurses of 137 rural mothers who had various amounts of medical supervision.

Classification According to Medical Supervision	Number of Mothers	Visited One or More Times by the P. H. N.	
		Number	Per Cent
All mothers	*137*	*48*	*35.0*
No prenatal care	41	8	19.5
Insufficient	33	11	33.3
Fair or good	63	29	46.0

cient" class. In contrast with this, 62 per cent of the "very poor" mothers had no prenatal care and 19 per cent had "insufficient" care. For those whose economic rating varied from "moderate" to "poor," the difference in prenatal care was not so great, but it decreased consistently with economic status. Only two or three mothers stated they could not afford to have prenatal care, but it seems likely that the expense was a deterring factor more often than was admitted.

Age of Mother and Previous Pregnancies in Relation to Prenatal Care. The age of the mother *per se* seemed to have little influence on her likelihood to have prenatal care, although of the women over 35 years of age who bore children in this period, only 29 per cent reported "fair or good" prenatal care as compared with 50 per cent of those under 35 years of age. Not age, but the frequency of previous pregnancies seemed to be the important factor. In order to show the influence of these two factors independently, Table 5 is presented in which women have been classified both according to their age and the number of previous pregnancies, and the factor of income is partially

Table 4. Amount of prenatal supervision according to economic status of the family.

Economic Status	Total Mothers	No. Having Specified Prenatal Care		
		None	Insufficient	Fair or Good
Total	*137*	*41*	*33*	*63*
Comfortable	12	0	2	10
Moderate +	46	10	13	23
Moderate −	38	11	9	18
Poor	20	7	5	8
Very Poor	21	13	4	4
	Per Cent Having Specified Care			
Total	*100.0*	*29.9*	*24.1*	*46.0*
Comfortable	100.0	0	16.7	83.3
Moderate +	100.0	21.7	28.3	50.0
Moderate −	100.0	28.9	23.7	47.4
Poor	100.0	35.0	25.0	40.0
Very Poor	99.9	61.9	19.0	19.0

Age	No Previous Pregnancy			1-2 Previous Pregnancies			3+ Previous Pregnancies		
	Total	Fair or Good Prenatal Care		Total	Fair or Good Prenatal Care		Total	Fair or Good Prenatal Care	
		Number	Per Cent		Number	Per Cent		Number	Per Cent
All Ages	*35*	*21*	*60.0*	*37*	*19*	*51.4*	*32*	*9*	*28.1*
−25	27	14	51.9	17	6	35.3	3	3	—
25-34	7	7	100.0	16	10	62.5	17	4	23.5
35+	1	0	—	4	3	—	12	2	16.7

Table 5. Amount of prenatal care according to age of mother and number of previous pregnancies for mothers of moderate or poor economic status.

eliminated by excluding those who were either in the highest or lowest economic class. Although the number of cases is small in the different sub-divisions, the suggestion is rather definite that, regardless of age, the proportion of women who had prenatal care decreased with the number of previous pregnancies. On the other hand, it appears that the older the woman the more likely she was to have adequate prenatal care for her first-born, and even for her second. The young mothers and those who had borne many children showed the least interest in prenatal care.

Health of the Mother. It is a striking fact that not one of the mothers who had no prenatal care reported any specific illness[2] during the prenatal period. In fact, the majority of them stated there was no need for prenatal care because they felt perfectly well. Of the 33 who had "insufficient" prenatal care, only three reported some illness. One mother who had "kidney convulsions" had gone once to her doctor in the early

[2]This does not include persons who reported some nausea, headache, constipation, heartburn, or swelling in the feet or legs.

months of pregnancy but stated that she "neglected" to return. Another had albuminuria but said that she was unable to go to town until the eighth month because of the bad roads. The third mother reported that she "was sick the last two months" during which time she made six visits to the doctor.

Most of the complications and illnesses were reported by mothers who had fair or good prenatal care. Eleven of the 63 women in this group reported some definite complication. Although it is obviously true that a mother may know more about any complicating conditions if she had medical care and, therefore, report them, one cannot but be impressed by the fact that nearly all women who reported any definite ill health during pregnancy did go to their doctor. One important indication of this sample, therefore, is that the mothers who *do* have prenatal care are not an unbiased sample of all mothers and that a true incidence rate of conditions that complicate pregnancies cannot be determined from doctors' case records. Another significant indication is that rural mothers apparently do not appreciate the value of prenatal care as a *preventive* health measure, although when they experience symptoms of illness they do seek medical service. Earlier recognition of symptoms and of the need for medical supervision undoubtedly would result from early and regular medical examinations but further education is necessary to get the rural mothers to cooperate in such a preventive program.

MATERNITY SERVICE BY THE RURAL PUBLIC HEALTH NURSE[1]

by MARIAN G. RANDALL, R.N.

THE vitally important responsibility of the public health nurse in carrying out a program of maternity welfare, in accordance with generally accepted standards, is now thoroughly realized. The extent to which she can discharge this responsibility in an effective manner is not so well understood. There is needed a more precise understanding of the difficulties she meets, of the ways in which her work must be integrated with the other activities of an official health organization, of the coordination of her services with medical practice, and of the extent of the *real* need for maternity service in the community. This is particularly true of rural areas where public health work is still in its initial stages.

Studies of actual experience under varying conditions undoubtedly will contribute to the necessary factual basis for further improvement in maternity programs. This paper summarizes some of the results of such a study in Cattaraugus County. The data used are from the records of maternity care by four public health nurses during one year and not only illustrate the ways in which records of this sort can be used for administrative purposes but also contain facts about maternity services actually rendered under rural conditions that may be of value in evaluating this phase of public health nursing practice.

[1]From the Division of Research, Milbank Memorial Fund. This is the second of a series of papers representing the results of studies of public health nursing in different types of official health organizations. The first will appear in a forthcoming issue of the *American Journal of Public Health* under the title: "Home Visiting by the Generalized Public Health Nurse in a Rural Area."

The Cattaraugus County Health Department, serving a primarily rural area of 1,343 square miles in the southwestern part of New York State, has had a generalized nursing service for several years. There are two supervisors and a director of the Bureau of Nursing and during the year studied there was an average of twelve staff nurses, each serving a population of approximately 3,500 to 4,500. It should be remembered that the following analysis relates only to one part of a generalized public health nursing service, and that each phase of the service is influenced and largely controlled by the total demands of the health department program.

The percentage distribution of time spent in actual field visits by all staff nurses shows 18 per cent of the total time is given to maternity services, with 7 per cent to prenatal visits, 2 per cent to delivery visits, and 9 per cent to postnatal visits.[2]

The maternity and family case records, from which the data were collected, are part of an experiment in instituting a simplified system to meet the needs of the present practice in this rural area, and provide comparable data about maternity cases including: the source of first information about the case, the nature of the problems, date of nurses' visits, services rendered at time of each visit, the results accomplished, and the reason for termination of the case.

Since it has not been possible as yet to establish prenatal clinics, the maternity program of the County Health Department is measured by the number of visits and services rendered in the homes and by the number of cases visited.

Number of Maternity Cases Visited

During the year February 1, 1930, to February 1, 1931,

[2] Winslow, C.-E. A., Dr. P. H., "Health on the Farm and in the Village," p. 179. The Macmillan Company, New York.

the nurses working in the three nursing districts of Ellicottville, Cattaraugus, and Salamanca, made a total of 544 visits to 131 maternity cases or an average of four visits per patient. This ratio of visits per case is for prenatal, delivery, and postnatal services combined and is computed upon a basis of visits per case per year. There were 1,118 maternity visits made by all the nurses on the staff during the same period. Assuming that our sample, which is the work of one-third of the staff, represents the ratio of individuals visited to visits made, there were approximately 260 maternity cases visited in Cattaraugus County in this period of a year. Excluding non-residents, the Indians, and Olean City, where the county nurses do not visit, there were 893 births, live and still, in Cattaraugus County in the year 1930.[3] This means that approximately 29 per cent of the maternity cases received some service from the county public health nurses and compares exactly with the experience of the Commonwealth Fund Child Health Demonstration in Rutherford County, Tennessee.[4] The accomplishment in demonstration areas naturally exceeds that of the many rural sections where little or no county health work has been organized.

In the three districts studied there were 366 births[5] reported to the nurses in 1930; and based on the visits to completed cases, 114 or 31 per cent had public health nursing

[3]There is, naturally, a carry-over of cases from any given year to another and the 12 months studied varies slightly from the calendar year; but without any correction for trend in birthrate, the number of 1930 births is representative of the total problem.

[4]Mustard, H.S., M.D. "Cross-Sections of Rural Health Progress." p. 100. The Commonwealth Fund, Division of Publications, New York.

[5]A count of duplicate copies of birth certificates filed in the three nursing district offices. The births registered anywhere in the County to mothers who were residents of these districts are included, but there is no correction for the few cases having prenatal visits who were delivered outside of the County or for the few cases visited who moved into the area at some time during the maternity period.

service at some time in the maternity period. As shown in Table 1, 24 per cent of the total pregnancies were visited in the prenatal period, 7 per cent had delivery nursing service, and 25 per cent received postpartum visits.

The volume of work per nurse in this area studied is significant, particularly in view of the fact that most of the county health departments in the United States have only one or two nurses. Our sample in Cattaraugus County shows that one nurse visits on the average 33 maternity cases in a year, and makes 62 prenatal, 68 postpartum, and 5 delivery visits, a total of 136 maternity visits.

Case-finding

There is no routine method for the reporting of maternity cases to the Health Department. The information as to cases comes from the sources shown in Table 2. Fifty per cent of the cases—the total of the three classifications, "visiting other members of family" (17 per cent), "neighbor" (16 per cent), and "patient or relative" (13 per cent)—are found through the nurses' professional contact with the people. A generalized nursing program offers many "reasons" for visiting in the homes, and a plan for an intensive case-finding program might well include routine home visits at regular frequent intervals to families selected as being most likely to

Table 1. Per cent of 366 pregnancies visited by public health nurses in each stated maternity period.[1]

Maternity Period	Cases Visited	
	Number	Per Cent
Prenatal	87	24.0
Delivery	23	6.5
Postpartum	90	24.5

[1] A given case may be included in one or all classifications.

have pregnancies occurring. These should include young married women without children, as only 34 per cent of the primiparae in this area as against 48 per cent of the multiparae were known to the public health nurse.

One of the principal objectives of the nurses' visiting is to educate the mothers in the need for early and continuous supervision by their physicians. In our sample, 40 per cent of all maternity visiting was first requested by the physicians, and 79 per cent of the total prenatal cases visited had registered with physicians previous to the nurse's first visit. It is evident that greater emphasis is needed on finding the cases not under medical supervision.

The amount of travel and proportion of time devoted to each phase of the work may be influenced by the location of the patients' homes; but the records show practically no difference in the number or type of visits made to the 41 per cent of the maternity cases living in the most rural sections, nearly all of whom were on unimproved dirt roads, the 33 per cent living in the small villages, or the 25 per cent living in the urban section of Salamanca City. Also, as shown in Table 3, the frequency with which the nurses visit maternity

Table 2. Distribution of maternity cases according to source of first information.

Source	Number	Per Cent
Total[1]	*109*	*100.0*
Physician	44	40.4
Visiting other member of family	19	17.4
Neighbor	18	16.5
Patient or relative	17	15.6
Other agencies	9	8.3
Other source	2	1.8

[1] Excluding 22 cases, for which source of information was not stated.

cases does not seem to be associated with the nurses' classification of the economic status of the family.

Medical Care

The ultimate success of a public health maternity program is dependent upon the amount and kind of medical care. In our three nursing districts, all but four of the 366 births in 1930 were attended by a physician and 30 per cent of the births occurred in hospitals. Of the 114 completed cases known to the nursing service, 11 per cent had no prenatal care by a physician. To the others the physician had an opportunity to give some prenatal medical care, and for 73 cases for whom the time of service was known, 17 per cent registered with him before the fifth month, 33 per cent in the fifth and sixth months, 14 per cent in the seventh and eighth months, and 36 per cent in the last month of pregnancy. This is further evidence for the need of finding cases not registered with physicians.

Prenatal nursing service is most effective when closely connected with medical conferences for the prospective mothers. If prenatal clinics are not yet practical in a rural area, some consideration might be given to recording some of the infor-

Table 3. Number of public health nursing visits to maternity cases of different economic status.

Economic Status	Women Having Stated Number of Visits				Per Cent Receiving Stated Number of Visits			
	One or More Visits	1	2–4	5+	One or More Visits	1	2–4	5+
Total	*114*	*16*	*40*	*58*	*99.9*	*14.0*	*35.0*	*50.9*
Comfortable	16	2	3	11	100.0	12.5	18.7	68.8
Moderate	46	8	19	19	100.0	17.4	41.3	4.13
Poor and very poor	52	6	18	28	100.0	11.5	34.6	53.9

mation about the examinations by private physicians and frequency of medical supervision on the nurses' records.

In addition to urging regular medical supervision, the public health nurse will, with the doctor's permission, supplement his orders by instructing the patient about the hygiene and diet of pregnancy, preparation of delivery supplies, and the preparation for the baby including clothes, toilet supplies, and the care of them. It is the practice, as in most places, for the nurse to report to the physician the conditions, findings, and advice given at each prenatal visit. In Cattaraugus County the public health nurse reports any symptoms she observes, but because of objections from the County Medical Society and others, she does not make the full prenatal visit which includes urinalysis and blood pressure. According to present practice the nursing services most frequently requested by physicians are assistance at delivery and postpartum bedside care.

Prenatal Visits

In the year studied 105 cases, 34 of whom had been visited by the public health nurse in the prenatal period of previous pregnancies, received a total of 327 prenatal visits.[6] Excluding 18 cases that were not yet delivered, the 87 patients visited in the prenatal period received a total of 255 visits, or an average of three visits per case. The distribution of these visits, Table 4, shows that 35 per cent of the cases had one visit and an additional 50 per cent had four or less. The number of prenatal visits is influenced, of course, by the month of pregnancy the cases are first known to the nurses. The time

[6]At a rate of 893 per 1,000 births this compares favorably with the standards of the American Public Health Association tentative appraisal form for rural health work which gives 750 per 1,000 births. The appraisal form states 25 per cent of the total births should be under prenatal supervision as compared with 24 per cent in our sample of Cattaraugus County.

Month of Pregnancy First Visited	Cases First Visited in Each month		Women Receiving Stated Number of Visits		
			1	2–4	5–7+
	Number	Per Cent			
Total	*80*	*100*	*28*	*40*	*12*
Before 5th month	6	8	1	—	5
5–6 "	16	20	4	7	5
7–9 "	58	72	23	33	2

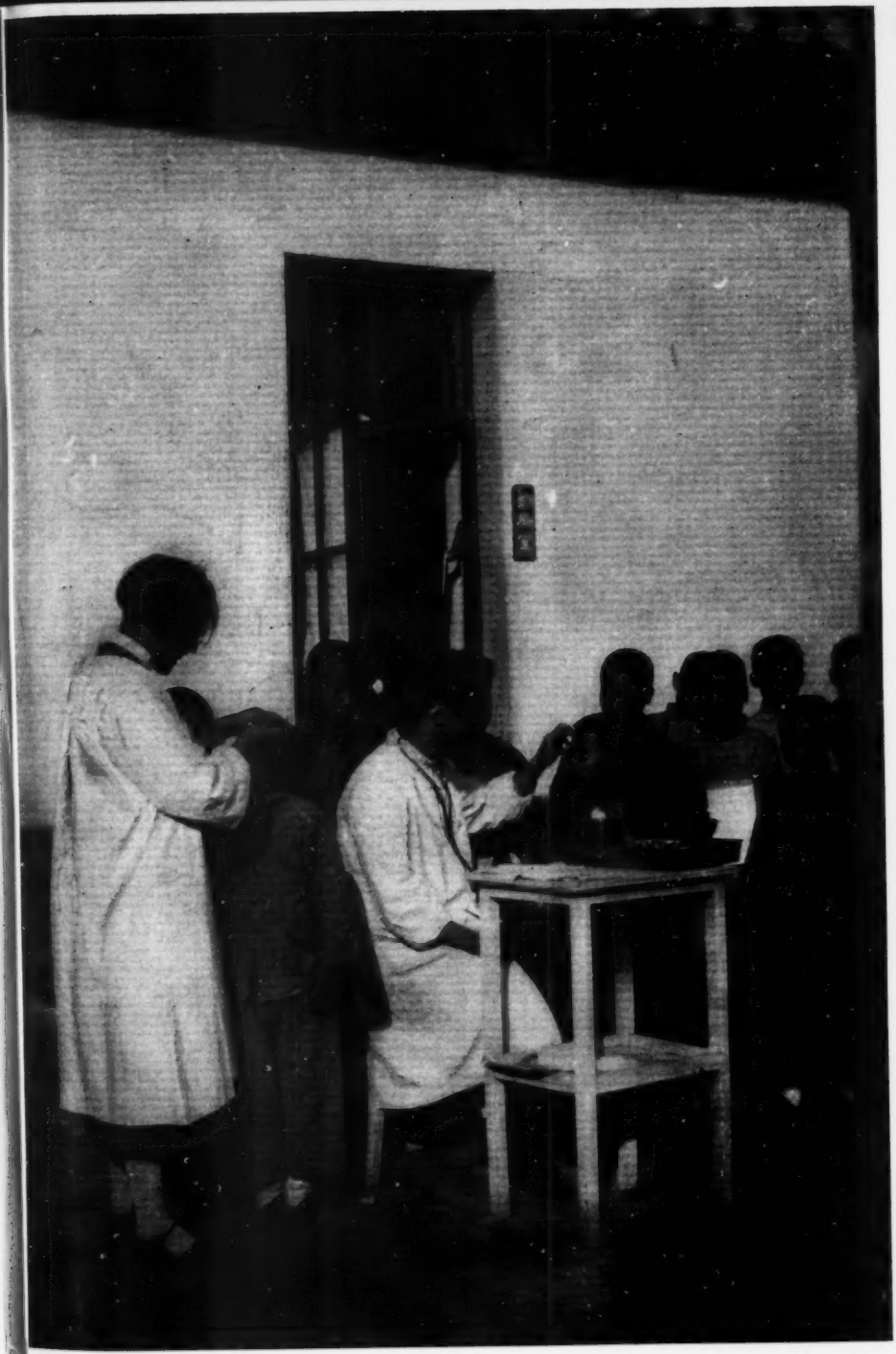
Table 4. Distribution of 230 home visits by public health nurses to 80 prenatal cases according to month of pregnancy in which the first visit was made.

of the first visit also indicates the opportunity afforded the nurse to carry out her written standards, which are similar to those generally accepted in other localities, namely, of monthly visits through the seventh month of pregnancy and fortnightly visits thereafter, as a minimum.[7]

For 13 of the prenatal cases there was definitely stated a reason why further visits were not possible, as follows: a physician requested the public health nurse to discontinue visiting six cases; three of the patients moved out of the County; impassable roads prevented the nurse from visiting three cases; and one prospective mother refused to see the nurse.

Excluding these 13 cases, and 7 others for whom it is not definitely known when the first visit was made, the remaining 67 cases are classified in Table 5, according to the month of pregnancy in which the nurses first visited the cases and are compared according to visits received and number of visits required by the standard for visiting. Twenty, or 30 per

[7]These standards are recommended by the Maternity Center in New York City, and by most official and private organizations which give maternity nursing service.



Trachoma clinic in Ting Hsien, China

A Chinese village well

cent, of the 67 cases visited received the standard number of visits, and while it is not possible at this time to compare this with that of any other rural or urban health department, it is probably a very good showing. When considered in terms of the total problem, however, it means that only 20 out of 366 (births) or 5.5 per cent of the total maternity cases received the number of prenatal visits set up as their standard for ideal performance. The standard is not too high when considering the individual case, but under the present set-up, it probably cannot be used for measuring the work or accomplishment in a county health department carrying on a generalized public health nursing program.

In addition to the numerical measurement of visits, the objectives of prenatal visiting are attainable, other things being equal, in proportion to the time at which the first visit was made. The opportunity began before the fifth month in only 6, or 8 per cent, of the cases. Four of these 6 were in the group discontinued for reasons given above. The other

Table 5. A comparison of the number of prenatal visits made by the public health nurse with the generally recommended standard for minimum number of visits, grouped according to the month of pregnancy the cases were first visited.

Month of Pregnancy First Visited	Recommended Standard for Minimum No. of Visits	No. of Cases First Visited in Each Month	No. of Cases Having Standard No. of Visits
Total	—	67	20
Before 5th month	8	2	1
5th month	7	6	0
6th month	6	9	2
7th month	5	17	2
8th month	4	18	4
1st 2 wks. of 9th mo.	2	7	3
Last 2 wks. of 9th mo.	1	8	8

2 had adequate supervision. One had five visits, but followed all advice given, visited her physician regularly, and went to the hospital for delivery; the other had ten visits during which time the nurse gave regular instruction and advice which was definitely followed, made all preparations for and assisted the physician at delivery, and gave postpartum bedside care. Contrasted with this case are the 8 patients who were not known until the last two weeks of pregnancy and were visited once. In two of these instances the visit was recorded as entirely unsatisfactory, because children were present and the mother was hesitant to talk to the nurse. Seventy-two per cent of the cases were not known to the nurse until the last three months of pregnancy.

Keeping in mind the wide variations in opportunity for service, a limited picture can be drawn of what occurred at the time of nurses' prenatal visits, by listing the frequency with which definite services were recorded by the nurses.

Service	*Number of Mothers*
Urged registration with physician	11
Urged return to physician	49
Advised about diet, rest, and hygiene	74
Advised about supplies for delivery	60
Gave prenatal literature	68
Taught making of delivery supplies	12
Took temperature and pulse	8
Demonstrated an abdominal binder	3
Taught exercise to correct varicose veins	2
Collected specimens of urine for laboratory examination	2
Gave bedside care because of special illness	2

Delivery and Postpartum Nursing Service

The educational and preventive program of the County Health Department, and the necessary limitation upon the

Postpartum Period First Visited	Cases First Visited in Each Period	Women Receiving Stated Number of Visits		
		1	2–4	5–7+
Total	*80*	*17*	*40*	*23*
1st day	38	1	16	21
2–7 days	9	1	6	2
2–3 weeks	14	5	9	—
4–6 weeks	5	1	4	—
After 6 weeks	14	9	5	—

Table 6. Distribution of 273 home visits by public health nurses to 80 postpartum cases who were delivered in their homes according to the postpartum period first visited.

number of nurses on the staff, make it impracticable to attempt a complete delivery and bedside nursing service for all who need it. When other arrangements cannot be made, however, the nurses do assist the physician at the time of delivery, and in our sample the public health nurse was present at the home delivery of 23 maternity cases. She visited 19 of these in the prenatal period, and had the opportunity to advise about preparations, but for the other four she was not called until the patient was in labor.

Ninety maternity cases received a total of 291 postpartum visits from the nurses, or an average of three visits per case. A local standard of seven has been set for the number of postpartum visits, but this standard relates particularly to bedside care. The time, or postpartum day or week, the nurse makes her first visit not only influences the probable number of visits but is a measure of the adequacy of the postpartum nursing supervision. This time grouping is used in Table 6, which shows the distribution of the postpartum visits to cases delivered in their homes. It is particularly significant that 38 of the 80 cases, or 48 per cent, were visited on the first post-

partum day and thirty of these were given bedside care at this time.

The amount of postpartum bedside care is represented in Table 7. In 16, or 45 per cent, of the cases the nurse gave bedside care once in order to teach someone in the household how to care for the patient, illustrating "that the rural nurse plays a most important role in supervising the home care rendered by family and neighbors."[8]

Table 7. Distribution of maternity cases according to frequency of bedside-care visits by public health nurse.

Frequency of Visits	Mothers	
	Number	Per Cent
One or more	35	99.9
One	16	45.7
2–3	9	25.7
4–6	7	20.0
7+	3	8.5

She gave bedside care on two or three return visits to 9, or 26 per cent, of the cases, but for the others she was obliged to take more responsibility for all the bedside care given and in three cases made seven or more visits.

The other 53 postpartum cases received visits that might be classified as "educational only," but advice about diet, rest, and hygiene are presumably included in the content of all visits. The nurse invariably urged the mother to visit the physician for a postpartum examination, but as far as she knew only 14 mothers followed this advice.

There were no maternal deaths among the maternity cases visited by the public health nurses, and the success of their activities as well as the attitude of the mothers toward health supervision is reflected on the nurses' records which report:

[8] Winslow, C.-E. A., Dr. P. H. "Health on the Farm and in the Village." p. 183. The Macmillan Company, New York.

"Patient cooperative—advice followed" for 79 cases; "advice partially followed" for 16 cases; "patient friendly, but advice not followed" for 15 cases; and "patient uncooperative" for 10 cases.

SUMMARY

Since the generalized public health nurse plays an important role in carrying out an official health department program of maternal welfare, there is need of more definite information about the extent to which she can discharge her responsibility in this phase of the work.

Some of the facts about the actual experience for a year of four staff nurses of the Cattaraugus County Department of Health, are summarized as follows:

Based on a total of 366 births reported to these nurses, 31 per cent of the cases had public health nursing service at some time in the maternity period. Twenty-four per cent of the total pregnancies were visited in the prenatal period. Seven per cent had delivery nursing service, and 25 per cent received some postpartum visits.

Fifty per cent of the maternity cases were found through the nurses' professional contact with the people. That more emphasis is needed on finding cases before they are registered with their physicians is evidenced by the fact that 79 per cent of the prenatal cases had registered with physicians previous to the nurses' first visit, and 36 per cent of the cases did not register with the physician until the last month of pregnancy. A more intensive case-finding program might include routine visits at frequent intervals to selected families, the basis of selection being such factors as age of mother, frequency of past pregnancies, economic ability to provide for prenatal service, and the like.

There was no evidence, from the sample studied, of the

difference in quantity or quality of visits to cases in different economic groups or to mothers living in villages as compared to those living on isolated farms on unimproved dirt roads.

The prenatal cases received an average of three nursing visits per case, 33 per cent of the cases receiving one prenatal visit and an additional 50 per cent four visits or less.

Since the time of the first visit indicates the opportunity afforded the nurse to carry out the generally accepted standard for visiting the following findings are of interest: 8 per cent were known to the nurse before the fifth month; 20 per cent in the fifth and sixth months; and 72 per cent in the last three months of pregnancy. Thirty per cent of all the prenatal cases visited received the generally recommended standard number of visits.

Delivery nursing service was given to 23, or 7 per cent of the total maternity cases in the area.

The postpartum cases received an average of three visits per case, 48 per cent of the cases delivered in their homes having been visited on the first postpartum day.

For 45 per cent of the cases visited, the nurse gave bedside care once in order to teach someone in the household how to care for the patient.

Instruction and advice about diet, rest, and hygiene are included in all postpartum visits, and 60 per cent of the postpartum cases received visits which might be classed as "educational only."

THE FURTHER DEVELOPMENT OF ANTI-TUBERCULOSIS WORK IN NEW YORK STATE

Preliminary Report and Recommendations of the Committee on Tuberculosis of the New York State Health Commission[1]

by JOHN A. KINGSBURY, *Chairman of the Committee*

THE very substantial progress which has attended the efforts to combat tuberculosis during the past twenty-five years has shown that this disease eventually can be controlled. The tuberculosis death rate has been reduced by 53 per cent in up-state New York and by 50 per cent in New York City since 1907. While decreases in mortality have occurred among persons in every age period, the greatest saving of lives has been among infants and children and among wage-earning men; this reflects perhaps more specifically the efforts to protect the children from infection in tuberculous families and the sanatorium care of persons affected with the disease, although many other anti-tuberculosis and public health activities as well as social and economic changes have contributed to the general result. The reduction in the mortality rate is an accomplishment of which the State justly can be proud. But great as it undoubtedly is, it cannot be looked upon as the attainment of an ultimate goal, for a situation still exists which challenges

[1] The New York State Health Commission was appointed on May 1, 1930. The Committee on Tuberculosis is one of several subcommittees which were appointed to study present-day public health problems in the State, and to make recommendations looking toward the development of more effectual public health protection. Serving on the Tuberculosis Committee with Mr. Kingsbury were: Miss Grace L. Anderson, Dr. Reginald M. Atwater, Dr. Edward R. Baldwin, Bailey B. Burritt, Miss Alta E. Dines, Dr. Albert H. Garvin, Edward Hochhauser, Harry L. Hopkins, Dr. Harry E. Kleinschmidt, Dr. E. P. Kolb, George J. Nelbach, Dr. John M. Nicklas, Dr. Robert E. Plunkett, Dr. Frederick Rand Rogers, Dr. George C. Ruhland, Fred M. Stein, and Dr. Nathan B. Van Etten.

the best efforts of scientists engaged in research, of the medical profession, of the public health officials, and of social and relief agencies. The successes so far gained should be regarded merely as preliminary victories in the warfare against the disease and should give an incentive to greater effort. The time has come for reaping the fruits of successful experience by more extensive and more direct application of that experience, and an enlarged effort will be peculiarly opportune in the next few years.

The Tuberculosis Situation in New York State Today

The fact must be faced squarely that the tuberculosis situation in the State is still far from satisfactory. It may be summarized by a few simple statements that, without any rhetorical embellishment, are eloquent and emphatic in themselves:

1. In 1929, over 4,000 deaths from tuberculosis occurred in up-state New York. Most of these deaths could have been prevented if adequate facilities existed for the efficient application of *existing* scientific knowledge of the prevention of the disease and of the care of tuberculous patients.

2. A conservative estimate, based on the ratio of cases to deaths, is that probably not less than 20,000 active cases of the disease exist in up-state New York and not less than 25,000 cases in New York City. Thousands of these cases are undiagnosed and untreated. It is safe to say that if modern facilities for the prevention of the disease could have been provided in all parts of the State, for all classes of the people, and with full cooperation and proper coordination of public health, medical, and social services, a large proportion of these 45,000 cases would not exist today.

3. The tuberculosis death rate in the urban areas of the State in 1929 was more than 35 per cent higher than the

rate for rural areas, and in New York City it was 45 per cent higher than in rural areas. Although the death rate has been considerably reduced, the problem of urban tuberculosis thus still exists; it continues to be bound up with such conditions of life and work peculiar to cities as unsatisfactory housing and the opportunity for infection, the lack of light and fresh air and outdoor recreation, the handicaps of poverty, and industrial hazards, all of which are conducive to the breakdown of resistance to the disease.

4. The fact that the decline in the tuberculosis death rate in rural areas has not kept pace with that in urban areas during the past ten or fifteen years is one of especial significance. It can be interpreted to mean that the facilities for prevention and care are grossly inadequate and ineffective and the mortality rate, although lower than in urban areas, is inexcusably high in the country, which ordinarily is considered as most favorable to a low prevalence of the disease.

5. The disease still takes its largest toll in life and illness among children, among men in the period when their economic value is at its maximum, among women at ages from 20 to 35 years, the period of their greatest fertility as well as highest earning capacity, and thus among adults of both sexes when their responsibility for the next generation is greatest. In fact, the social consequences of tuberculosis are still more serious than those of any other disease. As Mr. Homer Folks recently said in his DeLamar lecture at Johns Hopkins University:

> "We are entitled to great encouragement from the decline of tuberculosis, but perhaps we are beginning to feel *too* comfortable about it. Noting that in the total mortality rate five or six other diseases now stand higher, we are likely to overlook the fact that those deaths fall preponderantly in the very early or the late periods of life, and for that reason are less significant as a factor in human happi-

> ness and well being. Each death from tuberculosis rings down the curtain on a tragedy, which has continued, usually, over a period of years, and so involves a wide circle of suffering, loss, and harmfulness, extending far beyond the individual patient. Even if he apparently recovers, many of these losses have already been incurred, the economic security of the family remains precarious, and ofttimes the evil day is only postponed."

These facts unerringly point to the need for more adequate protection of infants and young children from infection, for further study of industrial and occupational hazards and for more effective means for their mitigation, and for more adequate care of tuberculous patients and their families, especially those in which the disease is a catastrophe that entails grave economic and social consequence.

General Considerations as to Policies

Recognizing the situation which has been briefly depicted above, the committee has considered practicable ways in which it can be met. At this time, it desires to outline very briefly certain general considerations upon which further recommendations will be made in its final report, and to make certain specific recommendations for immediate attention.

The possibilities of wider and more efficient application of existing knowledge. There is every reason to believe—as indeed the available evidence clearly shows—that the death rate from tuberculosis and the number of active cases cannot be reduced to a much greater extent by existing facilities and by methods now generally used. Yet the knowledge we already have of how to prevent and cure tuberculosis is sufficient to bring about far greater reductions in its prevalence and its mortality if this knowledge can be applied in an adequate manner to a larger proportion of our population.

In fact, actual experiments and demonstrations have shown that further reductions *can* be effected by using more effectively the existing methods of combating the disease. For example, it is a thoroughly established fact that if more adequate facilities are afforded for the discovery of active cases as sources of infection, the problem of caring for those who are exposed to these sources will be greatly simplified. It is known that if persons, particularly infants and children, can be protected against infection from active cases in the family, the disease can be prevented in a far greater degree than it is now. It is also known that if the methods already tried and proven successful in the discovery of cases in their early stages can be extended, the chances of recovery are greatly increased. The prevalence of tuberculosis has long been known to be associated with poverty, with domestic over-crowding, with certain industrial dusts, with over-fatigue, with malnutrition, with lack of sunshine and light, and with insufficient or unwholesome recreation; efforts to remove or ameliorate these conditions aid the population to increase its resistance to the disease. Such measures and methods as these, discovered by patient research, aided by accretions of mechanical invention, developed by experiment in actual practice, and tested by results, await a wider application by the public through its officially constituted agencies.

The possibility of applying the existing knowledge of tuberculosis prevention and cure more effectively on a wider scale depends, however, upon more efficient public health and social welfare and relief machinery. And among the most important steps in this direction, the committee believes, is their rapid improvement.

Development of efficient city and local health departments essential to effective tuberculosis activities. A consideration

which the committee regards as of fundamental importance is that tuberculosis prevention and cure can be brought about most effectually only when integrated with well-organized local health organizations and when there is active cooperation with the medical profession and when proper facilities are available for hospitals and social service relief. The experience of twenty-five years has clearly shown that anti-tuberculosis activities cannot be carried on to the best advantage separately from other public health, medical and social service, and relief work; they must be woven into all of the public health and welfare activities in which State and local, public and private agencies engage. Such a coordination of effort must be gradual, of course; it can be effected only step by step. But it is almost useless to attempt to coordinate State and other anti-tuberculosis activities with *inefficient* local health administrations that are unable to discharge the responsibility for the discovery, diagnosis, reporting, and sanitary supervision of cases of the disease in the areas where they occur. For this reason, the committee regards the more rapid development of well-rounded city and county health departments throughout the State as basic to the further development of the anti-tuberculosis work of all agencies during the coming decade.

The quality of services now rendered in the promotion and care of the disease and in the care of tuberculous patients should be improved. It is unanimously agreed by all who are in a position to judge that the need for improving the quality of the services now rendered is urgent. This involves better equipment for diagnosis, such as the X-ray and fluoroscope, for use, by the personnel of State and local institutions and by the medical profession; better qualified medical officers in public tuberculosis sanatoria and hospitals; especial instruction in tuberculosis for nurses and social and relief personnel;

more rigid supervision of local tuberculosis clinics and dispensaries and of private nursing homes and boarding and rooming houses in which tuberculous patients are cared for; a further coordination of activities relating to tuberculosis of the State Health, Education, and Social Welfare Departments, particularly with respect to the training of personnel; better facilities for the wider information of the public as regards the disease, more effective health teaching in the schools, and a marked improvement in the vocational training and rehabilitation of cases; uniform records of cases and of tuberculous families.

These improvements are necessary if the facilities and services which the State has already undertaken to provide and render are to keep abreast of modern methods of preventing and treating the disease. There is no new policy involved here; rather is it the application of the sound principle that the State should do efficiently what it has set out to do.

Social welfare and relief are an essential part of an effective anti-tuberculosis program. The peculiar social consequences of tuberculosis to the affected individual and his family make it necessary that adequate provision should be made for the efficient administration of social welfare and relief. Provision is already made for some welfare and relief activities, but at present they are inadequate, poorly coordinated, and not well supervised. It is evidenced by studies in up-state New York, for example, that there is a failure to maintain the essential continuity needed in the care of tuberculous patients and their families; this is due in part to the lack of proper supervision and in part to inadequate knowledge by the local personnel of the social and relief problems involved. The committee is strongly of the opinion that adequate provision should be made by new legislation to supplement

the existing laws, that State, county, and city tuberculosis hospitals and sanatoria should be authorized to employ hospital social workers, and that administrative improvements should be effected whereby the public health, welfare, and civic authorities, both official and voluntary, can promote continuously a better utilization by the counties and cities of the provisions in the Public Welfare Law and the Poor and Child Welfare Act for charitable relief in tuberculous families. It is fully realized that under present conditions the social welfare and relief activities are decentralized and that with so large a number of health officers and commissioners of welfare it is difficult in the circumstances to obtain proper coordination, but the need for better coordination is imperative.

The after care of the tuberculous. The problem of the after care of the tuberculous who have been discharged from sanatoria or from other institutions and who either cannot or should not go into full-time industry without a period of either further treatment or some form of supervised recuperation or part-time work, is a very real problem both from the point of view of the individual and his family and from the point of view of the State. Neither the State nor the private agencies have as yet found the way to solve this problem, nor do they quite know the size of it. They do, however, know the seriousness of it and the wastefulness that is due to the inadequacy of the present method.

In order to make effective all the enormous expenditure in medical and social work that is being put into the problem of overcoming the acute stages of the disease in sanatoria and institutions, there is no more important phase for the State to study and take forward steps on, than the after care problem of the tuberculous. The committee, therefore, suggests that, in order to take intelligent action, a committee be

appointed of those best informed in this problem, to make a careful study and constructive recommendations.

Need for more sanatoria.[2] This is regarded by the committee as of extreme practical importance at the present time. Since 1909, when the County Tuberculosis Hospital Law was passed, nearly all of the larger counties in this State have created sanatoria. Many of the smaller counties, however, most of which have populations of less than 35,000, have not found it possible to create such institutions and it would certainly not be economical to maintain them. As a result, there are twenty-four counties in up-state New York with a total population of more than 1,119,000 without public sanatorium facilities and the State and counties have only about 60 per cent of the hospital beds necessary for the segregation of tuberculous patients. Furthermore, a number of the counties which have constructed sanatoria find it increasingly difficult to maintain proper standards because of cost. In these counties without sanatoria and in counties with sanatoria that cannot meet the accepted standards of medical and other care, there seems to be no other alternative except the provision of modern sanatorium facilities by the State.

Facilities for research. Although the wider application of existing knowledge of prevention and cure of tuberculosis will undoubtedly result in further reduction of its prevalence and mortality, there are many unsolved questions in the etiology and epidemiology of the disease, and many opportunities for further improvement in methods of prevention, care, and relief. The solution of these should be aided and all op-

[2] The New York State Legislature, in the spring of 1931, made provision for carrying out this recommendation, which prior thereto had been incorporated into a preliminary report of the New York State Health Commission and conveyed to the Legislature as part of a special message from Governor Franklin D. Roosevelt. Specifically, the new law provides an appropriation of $750,000 for the purchase of sites for three district State sanatoria and for the construction of one of them during the fiscal year beginning July 1, 1931.

portunities should be taken advantage of in order to promote efficiency and economy in the greatest possible degree.

Unfortunately, however, the anti-tuberculosis agencies of the State exist today without proper facilities and equipment for conducting that sort of research which is recognized as essential to the efficient conduct of so large and important an organization. We cannot rest content in the false assumption that all of the knowledge necessary for the control of the disease is at hand. Further research is needed in order to discover the conditions which break down resistance to disease that are involved in the mode of living and in the conditions of work. Further research is also necessary in the most economical and efficacious administrative procedure. Carefully planned and conducted experiments in modes of preventing infection or bringing about immunity, in providing better methods for caring for infected children and tuberculous patients, and in the administration of social and relief measures, are highly desirable. These lines of research should be encouraged by the State, either in collaboration with existing research organizations or within its own organization in cooperation with local health and social agencies.

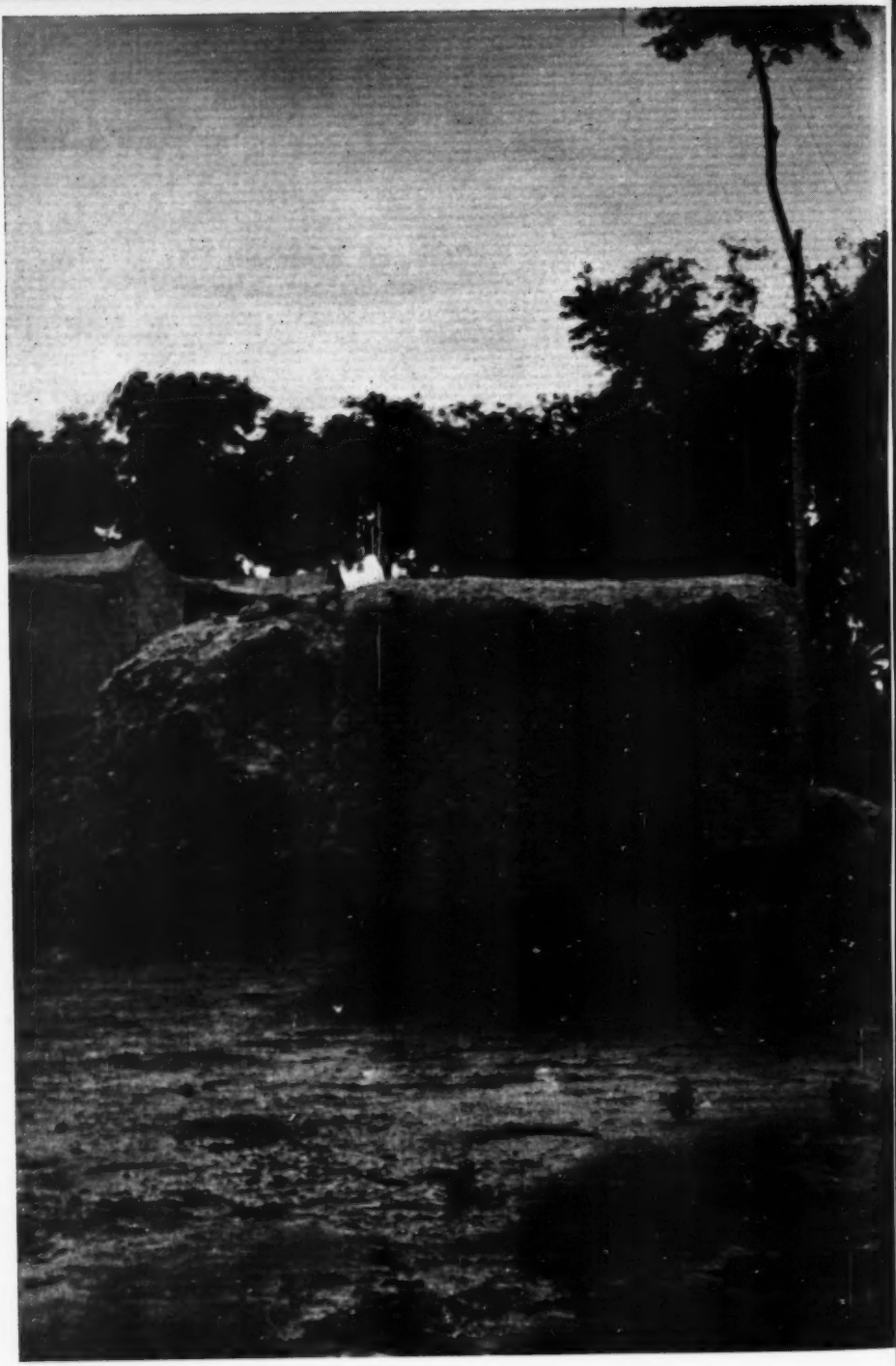
Recommendations

Having in mind the situation and the more urgent needs, the committee has formulated certain legislative recommendations. Briefly summarized, these are:

1. That the State provide and maintain at least three additional sanatoria for all types of tuberculosis cases, to be located geographically with reference to the unmet needs of sections of the State.

2. That in connection with the State sanatoria, there shall be established suitable institutional and field facilities for finding, instructing, and following-up patients.

Market day in a Chinese village



A Chinese barnyard scene and privy

3. That the Public Health Law be so amended as to place more definitely upon the local health officer the responsibility for bringing about the discovery, registration, and sanitary supervision of all cases of tuberculosis.

4. That adequate provision be made for social service and relief for tuberculous patients and their families.

5. That the Public Health Council be authorized to prescribe the qualifications for the position of chief medical officer of the public tuberculosis sanatoria and hospitals (State, county, and city) and that no such official shall receive appointment unless he possesses such qualifications, except that such qualifications may be waived, pending the availability of a qualified candidate.

6. That the State be enabled to provide through the State Sanatorium at Ray Brook, as at present, through the proposed State district sanatoria, and through the State Department of Health, facilities for the study of tuberculosis by physicians in all diagnostic and treatment procedures, including the use of the X-ray and fluoroscope, and also that authority be given to county and State tuberculosis sanatoria to establish an affiliated cooperative relationship with the training schools for nurses, whereby pupils may receive special courses of instruction in tuberculosis.

7. That the State Commissioner of Health shall be authorized to prescribe a uniform system of records for the administrative control of tuberculosis, to be kept by the appropriate local health authorities and that the State Health Department be enabled to furnish the proper blanks for such records to the local health authorities free of charge.

8. That the power of licensing the local tuberculosis dispensaries and clinics whether conducted by public authorities or voluntary agencies, be transferred to the State Department of Health from the State Department of Social Welfare

and that such licensing power thus lodged in the State Department of Health include power to the Public Health Council in its discretion to prescribe rules and regulations for the location, quarters, equipment, staff, and administration of such dispensaries and clinics.

9. That all tuberculosis sanatoria not operated by public authority, all rooming and boarding houses and nursing cottages in which tuberculosis cases are housed will be required to secure a license annually from a public health authority and that the Public Health Council be given power to establish rules and regulations for the organization and operation of such sanatoria, rooming and boarding houses, nursing cottages, and other establishments or agencies for the care of tuberculosis.

NEWS DIGEST

SEX differences in physical impairments of adult life is the subject of a paper by Rollo H. Britten which appears in the May, 1931, issue of the *American Journal of Hygiene*. This paper is the seventh in the series of studies in the diseases of adult life from the Milbank Memorial Fund Division of Research.

Mr. Britten's study uses the records of periodic health examinations given to 112,618 insurance policy holders by the Life Extension Institute. The findings are minimal rather than exaggerated for two principal reasons: (1) the persons examined had already been selected as in fairly good health when they took out their policies, and (2) the examinations were made by 9,000 physicians of average training and skill. In general, the results of a comparison of impairments found among males and females showed that—

1. The rates of physical impairments are, on the average, higher for women than for men, in spite of the fact that the reverse is true of mortality data.

2. The most marked excess among women is for thyroid conditions, visceroptosis, edema, adenitis, varicose veins, tenderness in region of gallbladder and appendix, heart conditions, tuberculosis, bronchitis and emphysema, symptoms of nervous state, and hemorrhoids.

3. For a number of conditions, the rates for men are higher than those for women, particularly for casts in urine, deflected septum, and arterial thickening.

4. The age prevalence of physical impairments is generally quite identical for the two sexes.

5. Housewives (largely a married group) show characteristic differences in comparison with the group gainfully occupied (largely unmarried), particularly with respect to teeth and pharyngeal conditions.

A limited number of copies of the study are available for distribution in reprint form.

DIFFERENTIAL age at marriage according to social class, by Frank W. Notestein of the Research Division, Milbank Memorial Fund, is the report of a study based on records obobtained from the 1910 census schedules concerning age, duration of marriage, and occupation of husband, for urban and rural women of native white parentage. The women are grouped into six urban and three rural classes on the basis of the husband's occupation. Because of certain limitations of the data the study is confined to 17,876 women who married between 1900 and 1905. Analysis of the age-at-marriage distributions for these women leads to the following conclusions: (1) The women of the urban population married later than those of the rural, but the women of the three "lowest" urban classes married earlier than those of the "highest" rural class. (2) For both the urban and rural classes age at marriage increases with "rising" social status, and the increase is largest between the classes differing most in social status. (3) The age at marriage for certain classes is lower than that of the most nearly comparable English classes. (4) The direct relation of age at marriage and social status accounts in part for the inverse relation between the fertility and social status of the classes.

The paper appears in the May, 1931, issue of the *American Journal of Sociology*.

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TUBERCULOSIS in adolescents is the subject of a study by Drs. Margaret Witter Barnard, J. Burns Amberson, Jr., and Marion Franklin Lowe, which was published in the May, 1931, issue of the *American Review of Tuberculosis*.

An intensive examination of one thousand 13 and 14 year old school children in the Bellevue-Yorkville district of New York City was made (1) to determine an effective method (feasible for a City Department of Health) of finding cases of tuberculosis in children which are generally assumed to be an important source of tuberculosis in young adults, and (2) to find out the kind and amount of tuberculous infection in a cross-section of child population.

General group characteristics, general health conditions, and weight were found to be negative factors for case finding among children. The factor of history of household contact

with tuberculosis requires such intensive inquiry that its value is limited except as a function of an organized tuberculosis service. The use of the X-ray alone for all children for screening purposes was considered impracticable because of its limited information and expensiveness. The tuberculin test was found to be a relatively easy and inexpensive method of separating the children into groups: (1) those who have some tuberculous infection needing further study and (2) those who have no infection, or in whom infection is so completely healed that allergy is lost.

Five hundred and twenty of the thousand children reacted to the first injection of tuberculin (0.1 mgm.) and an additional 153 reacted to the second dose (1.0 mgm.) making a total of 673 positive reactors or 67.3 per cent of the total children tested. Two hundred and eighty of the positive and eleven of the negative reactors were considered as cases needing supervision. These cases according to the classification used by the National Tuberculosis Association were grouped as follows: (1) observation, 205 cases; (2) manifest disease, 15 cases; and (3) apparently healed, 71 cases. One hundred and eighty-four of these cases were found to have tuberculous pulmonary lesions demonstrable by X-ray.

To study thoroughly the incidence of tuberculous infection and disease in a group, the authors' conclusion was that the procedure must include the following elements: (1) A test of the entire group by tuberculin—to screen out those with significant tuberculous infection. (2) X-ray of the positive reactors—to discover lesions demonstrable in the pulmonary-tracheobronchial area. (3) A complete pediatrics examination of the positive reactors—to evaluate general health conditions as contributing factors. (4) A final decision as to further care of the positive reactors, made after a careful study of tuberculosis findings, general health condition, and amount of exposure to the disease.

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THE insight with which the relationship between private medical practice and the public health services in various European countries is set forth by Sir Arthur Newsholme in the first volume of his international public health studies received high commendation by English medi-

cal journals following publication of the British edition of the book by George Allen and Unwin, Ltd., London. The volume, published recently in this country by the Williams and Wilkins Company of Baltimore, is the first of a series of four bearing the title "International Studies on the Relation Between the Private and Official Practice of Medicine with Special Reference to the Prevention of Disease." The present work is concerned with public health measures, sickness insurance, hospitalization, and other allied subjects as observed in The Netherlands, the Scandinavian countries, Germany, Austria, and Switzerland. The author's investigation was undertaken at the request of the trustees of the Milbank Memorial Fund in order that they might be guided in their future policy in aiding public health movements. A special aim of the investigation was to enable the Fund to avoid possibility of jeopardizing the interests of private practitioners.

"The result of the investigation," says the *Medical Officer*, "is a book of extraordinary value and interest. Sir Arthur Newsholme has given to each chapter an individuality which results from the different social viewpoints and the methods of administration in the various countries he visited."

"No one is better qualified to conduct such an investigation," the *Spectator* declares. "Sir Arthur Newsholme has had a long experience in the problems of the treatment and prevention of disease, has a marked facility for seizing on essentials, and is the possessor of a simple, effective style of writing. . . . The author's researches are concerned with many problems of social and individual medicines. He succeeds in throwing light on all of them."

Paying a tribute to Sir Arthur for "the courage and the youthful enthusiasm" with which he has undertaken his "formidable task," the *British Medical Journal* continues: "The great benefit of possessing in convenient form data which show how any given country has reached its present position or obtained its special advantages on the medical side is obvious. Sir Arthur Newsholme, in this readable and instructive volume has done this for each country reviewed. Those who are visiting the countries with which this book deals would do well to slip it in beside their guide-books."

Another medical journal, *The Hospital*, finds the book "a

mine of information on the subject" in that it shows the extent to which problems in the field of public health are common to different countries. "The trustees of the Milbank Memorial Fund," it declares, "were fortunate in securing the services of Sir Arthur Newsholme, with his long experience so peculiarly suited to make a study of this kind, to marshal facts with understanding and conciseness."

"This book is a public service," says *General Practice*. "A knowledge of the problems and achievements of other countries is essential in any reasoned approach to our own problems. Extension of medical insurance and great changes in the voluntary and municipal hospitals are inevitable; and equally inevitable are drastic effects on private practice and the status of the private practitioner. The completed studies will represent what is easily the most comprehensive survey of the modern practice of medicine. A warm welcome awaits the three further volumes promised."

The second volume of the series, which was first issued in England in May and has recently been published in the United States, deals with Belgium, France, Italy, Yugoslavia, Hungary, Poland, and Czechoslovakia. It, too, sells at sixteen shillings or $4.00 per copy. In most respects it treats of the same aspects of public health administration in relation to the private practitioner as did its predecessor.

Special mention may be made of the author's description of recent developments in France and Italy, which are of exceptional interest for the bearing they have on the spread of new public health ideas throughout Europe. Under the Fascist regime in Italy, for example, a new system of public health administration has been evolved which is being watched with interest by other countries. The Fascist revolution, Sir Arthur points out, has been followed by the organization of doctors in a new combination of Corporate Syndicates for the carrying out of important duties. These duties comprise the giving of assistance and counsel in matters of hygiene, with a view to the improved health and greater productivity of the workers of the realm. The medical syndicates are also intended to promote scientific study and to protect the conditions of professional work.

It is the definite judgment of those whom Sir Arthur News-

holme consulted in Italy that the new system of medical organization has had a powerfully beneficial influence on its economic position, and has aided greatly in drawing the attention of the State authorities to the desires of the profession.

"The development and working of this elaborate machinery for control of the medical profession," he says, "will be watched with interest. It is characteristic of a highly developed and centralized organization in which individual action must bend completely to the will of the community as expressed in the syndicate. If future difficulties arise they will emerge especially in the relationship between the medical and the workers' syndicates."

The discussion of the medico-political problems of France is also of special interest at this time, notably the new system of national sickness insurance. The French law provides for insurance against sickness, maternity, invalidity, old age, death, and unemployment. Though it was passed by the Chamber of Deputies in April, 1928, a delay of one year was arranged for the necessary executive arrangements, an interval which has already passed, Sir Arthur declares, without much further progress being made. The resources of French finance are heavily involved in the measure, which provides insurance for every employed person, male or female, with a total annual salary not exceeding 18,000 francs. This limit is not fixed, since an additional 2,000 francs is allowed for each dependent child.

The third volume of the International Studies, which will be published in the early fall, will have to do with Great Britain and Ireland. In a fourth and independent book, to appear later, Dr. Newsholme will summarize the subject of public health in its relation to private practice, and will present his conclusions concerning fundamental health problems and suggestions for meeting them.

THE publication last May of Dr. C.-E. A. Winslow's evaluation of the Cattaraugus County Health Demonstration under the title "Health on the Farm and in the Village," evoked widespread editorial and news comment in the daily press throughout the country. Dr. Winslow's objective and critical study of the results of the eight years' demonstration has evi-

dently been regarded as impressive proof of the significance which the Cattaraugus demonstration holds for other rural sections.

The *New York Times* editorial, after giving an extensive outline of the purposes and the reasons which impelled the Milbank Memorial Fund to give material support to Cattaraugus County in carrying out the program, continues: "The general opinion that there is not so great need of modern systematic health service in the country as in the cities is mistaken. 'The farm dweller has today just as much illness as the city dweller, and perhaps more.' He needs health protection, but it costs more, and as small local units cannot afford to develop an adequate medical service, it becomes necessary to have a county organization, or to unite local units into larger ones in some other way. Even so, without state aid there is no way out. . . . The Fund gave material support and counsel, but the initiative was taken by the official representatives of the County. It was 'a demonstration by and not on the people.' 'Cattaraugus' may come to be a name for an adequate health service."

The *New York Herald-Tribune's* editorial stresses the importance of favorable action on the bill presented in Albany to make county health organizations mandatory. "Successful examples of the county health unit should have persuasive value with members of the Legislature who have not made up their minds on the question of supplanting town and village units by the larger sized organization. Directly pertinent is the report of Dr. C.-E. A. Winslow, professor of public health at the Yale School of Medicine, on the eight years' experience of rural health work in Cattaraugus County, which has had generous support from the Milbank Memorial Fund. . . .

"It may be granted that the Cattaraugus demonstration has been conducted with exceptional zeal and thoroughness, but it is a model which every rural county can emulate with the State's assistance under the present permissive law. The legislative leaders were unable last winter to press to passage the bill to organize county health units throughout the State, although that development was the most important feature of the program recommended by the special state health commission. The merits of the propos-

al warrant prompt and favorable consideration at the next session."

A similar hope that this measure will be passed is expressed in the *New York Evening Post's* editorial, which after commenting at length on the Cattaraugus County demonstration, declares: "The next Legislature at Albany should initiate action looking to the setting up of a department of health in every county in this State."

The *Springfield Republican's* comment runs in part as follows: "The question of recruiting the ranks of country doctors and improving the health conditions of rural communities is so much discussed that general interest attaches to a report of an eight years' experimental survey in Cattaraugus County, New York. The conclusions reached from the survey that rural sections generally enjoy less health protection than the cities accord with the view that has come to be held by many well-informed persons. . . . Facts thus set forth go to support the belief that much can be accomplished in promoting higher standards of rural health protection through an intelligent organizing of community forces. If, as Dr. Winslow says, the direct saving of lives by this experimental campaign represents an economic saving amounting to double the cost of the survey, there is a particular incentive for other counties to try to apply the policies deduced."

The Worcester, *Evening Gazette*, pointing out the growing need for hospital facilities in cities, compares the Cattaraugus County demonstration with the efforts in health promotion being made everywhere in progressive urban centers and concludes: "The report of the results indicates that the Cattaraugus experiment has been well worth while."

The need for better rural health facilities is likewise stressed by the *Albany Times-Union*, which says in part: "The health of rural communities has received far less attention than the health of urban communities. Undoubtedly this has an important bearing on statistics recently published by the American Child Health Association showing that city children, in spite of the disadvantages of city life, have better health records than country children."

The *Boston Herald*, commenting editorially on the demonstration, quotes Dr. Winslow as declaring that the average farm

and small-town dweller depend for protection and care on public health machinery which is twenty-five years behind the times, and concludes: "For many years the average student of conditions has suspected this to be true. This Milbank report furnishes proof of it."

The publication of Dr. Winslow's report attracted wide attention in cities in up-state New York which had followed with interest the progress of the demonstration. Extended résumés of the health program appeared in the Buffalo, Olean, and Syracuse newspapers, as well as editorial comment on its significance. Newspapers in the Middle West and other sections far afield also devoted considerable space to a discussion of Dr. Winslow's chief conclusions concerning rural health.

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JOHN ADAMS KINGSBURY, secretary of the Milbank Memorial Fund, received on June 1, from Syracuse University, the honorary degree of Doctor of Laws, in recognition of his services during the past twenty-five years in the cause of education, public health, social welfare, and in the general betterment of humanity.

In awarding the degree, Chancellor Charles W. Flint paid him the following tribute: "John Adams Kingsbury, student of the University of Washington, Bachelor of Science, also graduate student of Columbia University, school principal and superintendent for twenty-four years, brilliant leader of forces for social welfare, as an officer of the New York State Charities Aid Association, as organizer of the first Conference of Mayors of New York State, as general director of the New York Association for the Improving the Condition of the Poor, as Commissioner of Public Charities of New York City; then abroad as assistant general director of relief American Red Cross, and as director of the department of citizenship of the Educational Corps of the American Expeditionary Forces; and of late years as secretary of the Milbank Memorial Fund; for your devoted and skilled service to humanity at home and abroad, for your present activity as director and counsellor of many organizations devoted to public charity, already decorated by foreign governments, Syracuse University is happy to admit you to the degree of Doctor of Laws and invest you with all the rights and privi-

leges appertaining to that degree."

THE need for better trained personnel is strongly emphasized by all groups interested in the improvement of public health administration and practice. The role of the public health nurse is one of growing importance in both official and unofficial health organizations, and to aid in meeting the need for qualified personnel the Milbank Memorial Fund has for some time been interested in the better training and education of this group. Three public health nursing education projects are at present assited by the Fund.

Rural Nursing Scholarships. The stimulation and development of rural health work has brought a special need for public health nurses who are adequately prepared to meet rural situations. Since 1926, the Milbank Memorial Fund has offered scholarships for rural field experience for students from the nursing education department in Teachers College, Columbia University. The scholarship allowance is sufficient to provide transportation and living expenses for two months in Cattaraugus County, where the health department is organized on a county unit plan, sponsors a generalized nursing program, and is able to plan and supervise the work so that students may have actual experience in addition to observation.

Scholarships have been granted to four students for the summer of 1931, which will make the group of nurses having this field experience total seventeen, since 1926. With one exception the thirteen nurses who have completed the course are now engaged in one of the branches of public health nursing. Five are doing rural work, four in this country and one in China; one is a supervisor and two are staff nurses in urban visiting nurse associations; one is doing school nursing; one is educational director of a hospital out-patient department; one is assistant director of the nursing service of the American Red Cross; and one is assistant professor of a university public health nursing course.

The Teaching Service of East Harlem Nursing and Health Service. The teaching program of the East Harlem Nursing and Health Service was initiated in April, 1928, through a special grant from the Milbank Memorial Fund, to meet the need for

field experience for advanced public health nursing students. With a teaching staff of university caliber responsible for maintaining high standards and techniques, the teaching service utilizes, and in fact, is made possible by the well-developed generalized nursing and health services of the community program.

The demand for this educational service is demonstrated by the increasing registration, and the total enrollment in the past 37 months of 391 students. The 310 American students came from 36 states and the 81 foreign students from 30 countries. Forty-eight per cent of the students have been from the department of nursing education in Teachers College, Columbia University. With this affiliation, the field work supplements and illustrates the classroom theory and college credits are given for the course. Another 30 per cent of the total enrollment, has been comprised of nurses from other health organizations in New York and other cities desirous of advanced experience in public health nursing practice. A third group, 22 per cent, mostly from foreign countries, registered through an affiliation with Rockefeller Foundation.

In addition there is a group classified as "visitors," who have less than the forty hours, designated as a unit of college work. In the first four months of 1931 there were 113 visitors who attended group classes as well as individual conferences, with an average time per visitor of between three and four hours.

This brief summary about the students who have had these opportunities, will be supplemented by a complete description of the work in a report now in preparation in the offices of the East Harlem Nursing and Health Service.

Department of Public Health Nursing, Syracuse University. The establishment in 1930 of a department of Public Health Nursing in the College of Medicine, Syracuse University, was made possible through a grant by the Milbank Memorial Fund. Actual teaching began in the second semester of the current academic year with a registration of ten part-time students.

The two programs of study offered for properly qualified graduate nurses are described in a special bulletin issued by the department; one leading to the degree of Bachelor of Science with a major in Public Health Nursing; one leading to the certificate in Public Health Nursing.

In addition to the theoretical courses, supervised field experience is offered through the cooperation of the City Health Department Bureau of Nursing, the Visiting Nurse Association, and the School Health Service of the Board of Education. This greatly increases the value of the course, by providing an opportunity for the application of theory to the practical situation.

For those who are eligible there are valuable electives from the wide range of courses offered in the College of Home Economics, Teachers College, and the College of Liberal Arts.

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THE first number of "The Health Examiner," the official publication of the Greater New York Committee on Health Examination, appeared on April first. It outlines in detail the five-year program of activities by the five county medical societies in the metropolitan district to spread the gospel of health conservation through periodic examinations. Physicians, medical institutions, schools, hospitals, the press, radio, motion pictures, the lecture platform, and industrial and public service organizations will have a part in the campaign.

It is the purpose of "The Health Examiner" to keep the medical profession informed of the progress of the campaign and supplied with information and data of value on the technique and practice of health examinations.

The five-year program was formally launched on April twenty-seventh at a meeting held at the Academy of Medicine, 2 East 103rd Street, which was attended by physicians of the five boroughs. The speakers included Dr. Charles Gordon Heyd, president of the New York County Medical Society, who presided; Dr. A. J. Rongy, chairman of the Greater New York Committee, who outlined the aims of the Committee and the promise of their fulfillment; Dr. Linsly R. Williams, director of the New York Academy of Medicine; Dr. John W. Withers, dean of the School of Education, New York University; Dr. Samuel W. Lambert, and Dean Willard C. Rappleye, of the Columbia School of Medicine. Others participating in the discussion that followed the formal addresses included Doctors Orrin S. Wightman, Luther F. Warren, George Baehr, E. George Payne, E. C. Podvin, Dennis E. McMahon, and John A. Hartwell.